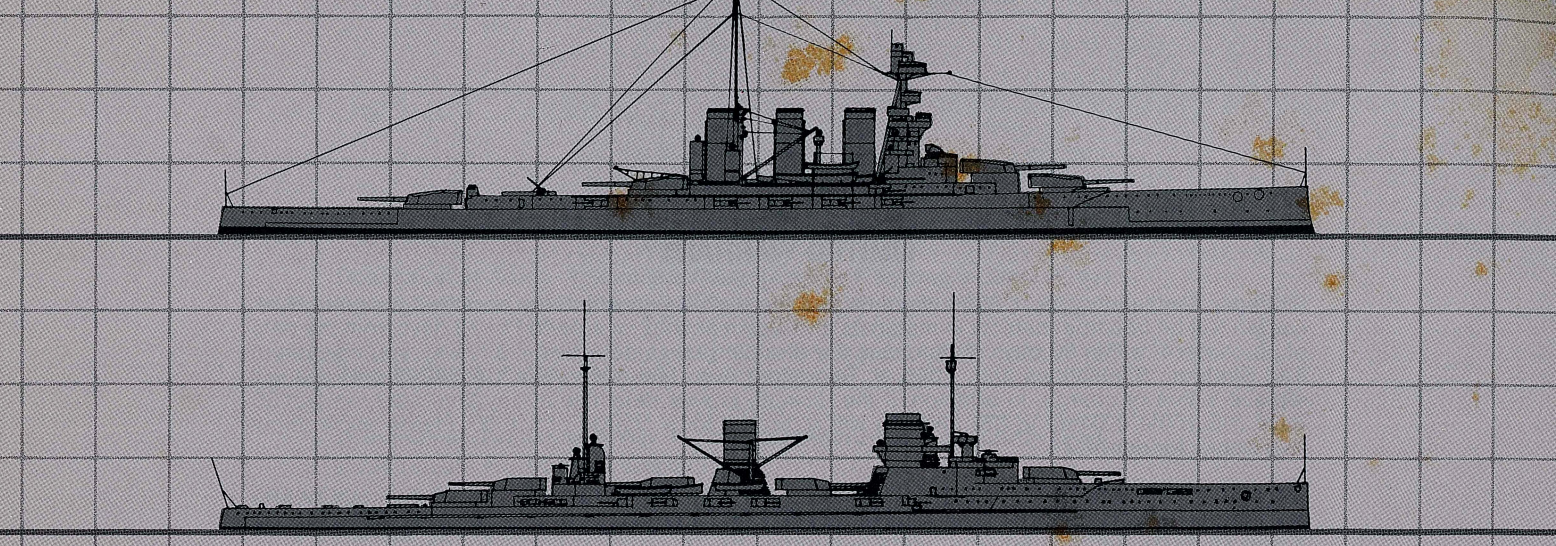
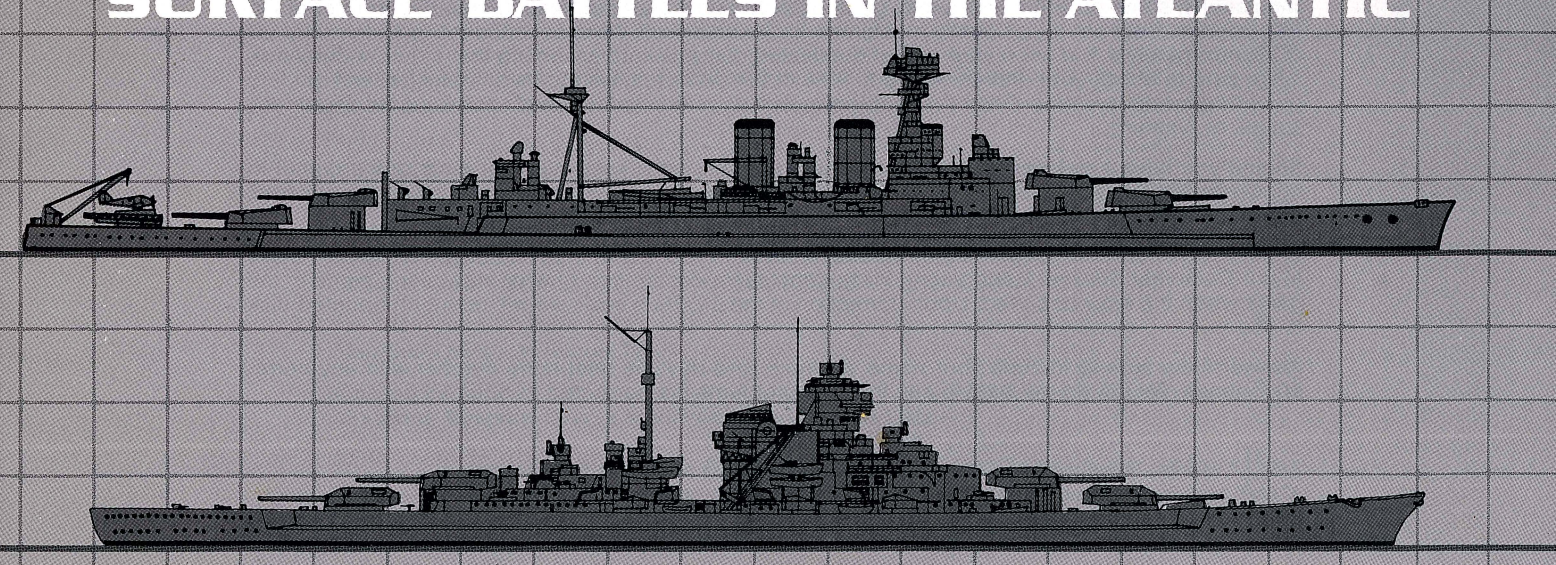


THE COMPLETE SIMULATION OF
WORLD WAR I

BATTLE CRUISER™

WORLD WAR II
SURFACE BATTLES IN THE ATLANTIC



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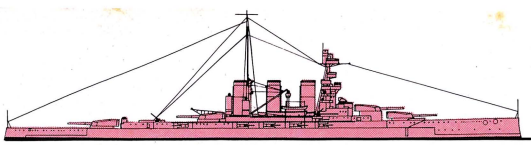
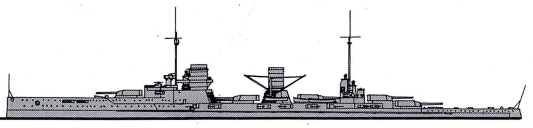




1.0 INTRODUCTION

BATTLECRUISER is a game of tactical-level naval combat between Axis and Allied ships from 1914-1918 and 1941-1945. In this rulebook, we are using the term "Axis" to indicate German ships in WWI and German and Italian ships in WWII. The term "Allied" refers to British ships in WWI and British and French ships in WWII.

1.1 Description of Action

Each game turn consists of two phases. In the orders phase, the players, one at a time, give orders to the ships that they control. In the action phase all ships will carry out their orders. During the action phase, ship and torpedo movement will be updated every 30 seconds; searches and gunfire will be resolved every 2 minutes. Players may interrupt the action phase after each two-minute period to modify their orders or check the status of their ships.

1.2 Starting a Game (Apple)

If you wish to play WWI scenarios, insert the front side of the game disk; insert the back side for WWII. To begin the game, boot the proper side of the game disk, and the game will begin automatically. If you are using an Apple III you must first go into Apple II emulation mode.

1.3 Starting a Game (C-64)

If you wish to play WWI scenarios, insert the front side of the game disk; insert the back side for WWII. To begin the game, insert the proper side of the game disk into your disk drive. Type: LOAD"*",8 and press <RETURN>. When READY appears, type RUN and press <RETURN>.

1.4 Starting a Game (Atari)

To begin the game, boot the Scenario side of your disk. Before beginning, remove all cartridges from your computer. Owners of the 800XL will have to hold down the OPTION key when they turn on their computer to boot the game. After you have selected the starting conditions for the game, the computer will ask you to insert the Game side of your disk. Two disks are included — one contains WWI scenarios, the other contains WWII scenarios.

1.5 Saving a Game

At the end of the deployment phase and before each orders phase, the computer will allow the players to save the game in progress. You will need a scratch disk to store the save game data. Save game disks may be initialized for SSI use during a game by following instructions included in the game program. Each save game disk holds from 5–7 games. *WARNING: The program will not inform you when you have exceeded the disk space on your save game disk.* Once a game is saved, you will be able to restart it at the point you left off.

WHEN RESTARTING A SAVED GAME, YOU MUST SET THE CORRECT NUMBER OF PLAYERS ON THE OPENING MENU.

1.6 The Map

The BATTLECRUISER map is a 60 × 60 square grid with each square measuring 1000 yards across. Players may elect to fight their battles on an open sea map or on a custom map that the players design themselves.

1.7 Sound

During the action phase, the players may toggle the sound on/off by pressing the <S> key.

2.0 GENERAL DESCRIPTION

2.1 Parts Inventory

a. Game box
b. Rulebook
c. Game disk

2.2 Abbreviations

Abbreviations used in the game are listed below:

BB battleship
OBB old battleship
BC battlecruiser
AC armored cruiser
CA heavy cruiser
CL light cruiser
CLAA anti-aircraft cruiser
DD destroyer
DE destroyer escort
TB torpedo boat
AK cargo ship (transport)

3.0 STARTING THE GAME

3.1 Determining Conditions of Play

At the start of the game, the players must determine the conditions under which the game will be played. On the Apple version, the conditions may be changed by entering the following numbers:

(1) NEW GAME or SAVED GAME
(2) 1 DISK DRIVE or 2 DISK DRIVES
(3) SOLITAIRE or TWO PLAYERS
(4) HANDICAP LEVEL
(5) DELAY LENGTH
(6) SELECT SCENARIO

On the Atari and C-64 versions:

(1) NEW GAME or SAVED GAME
(2) SOLITAIRE or TWO PLAYERS
(3) HANDICAP LEVEL
(4) DELAY LENGTH
(5) SELECT SCENARIO

3.2 Player Determination

BATTLECRUISER may be played by either zero, one or two players, and this is determined by the option selected on the opening menu. For example, if you wished to watch a computer-controlled Axis force fight a computer-controlled Allied force, you should select the option BOTH COMPUTER. Saved games can be reloaded using any opponent option.

3.3 Handicap Level

At the start of the game, the players must determine the handicap level (1–5). The effects of the handicap levels are listed below:

Level 1 Allied strength reduced 20%
Level 2 Allied strength reduced 10%
Level 3 No reduction
Level 4 Axis strength reduced 10%
Level 5 Axis strength reduced 20%

A player's 'strength' is reduced by lowering the number of ship selection points that he may use to buy his force. The handicap does not affect play of the historical scenarios.

3.4 Delay Length

The delay length affects the messages displayed during the action phase. The greater the delay length, the longer these messages will remain displayed. A delay length of 1 will greatly speed up the game but will cause some messages to be virtually unreadable. A delay length of 9 will slow the game considerably, but will allow the player maximum time to study the various reports provided during the action phase. No delay will be provided after the display of non-penetrating hits during the action phase.

3.5 Selecting a Scenario

You may select one of 4 historical scenarios from each war (see 14.0), or you may elect to build your own scenario. If you select a historical scenario, the computer will skip the deployment phase and go directly to the orders phase to start the game.

If you elect to build your own scenario, you will be asked several questions regarding the time and conditions of battle (see 4.0).

New players are advised to begin by playing scenarios they have created themselves. Creating and playing a small battleline scenario on an open sea map is recommended.

4.0 BUILDING SCENARIOS

When building scenarios, the players must answer questions regarding the time and conditions of battle. Players will have the option of selecting/buying the ships or allowing the computer to automatically select an appropriate force.

4.1 Selecting the Battle Area Map

Players have the option of selecting:

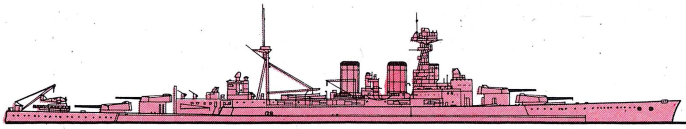
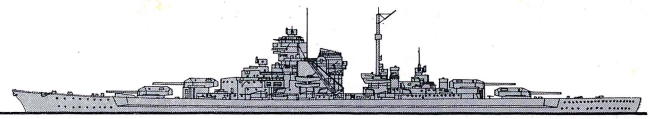
1. Open Sea
2. Custom Map

Open Sea

A 60 × 60 square grid with no land masses. When playing battleline scenarios on an open sea map, the map will attempt to shift to prevent ships from sailing off the edge.

Custom Map

The player may recall a custom map that he previously constructed and stored on a scratch disk (see 15.0).

4.2 Build Scenario or Design Map

Players wishing to design a new map or modify an existing custom map should select the (D) option. To build a new custom map, the player should have selected the open sea option in 4.1. To modify an existing custom map, the player should have recalled the appropriate custom map in 4.1. Instructions for constructing custom maps are described in 15.0.

4.3 Setting the Time and Date of Battle

Players may adjust the time and date of battle by using the following menu options:

(Y)EAR from 1914 to 1918 or 1939 to 1945
(M)ONTH
(D)AY
(H)OUR
(U) MINUTE
(A)CCEPT DISPLAYED TIME/DATE

The year selected will determine the availability of various ship classes and the availability and quality of radar on the ships. The hour selected will determine if day, night, dawn or dusk visibility conditions are in effect.

DAWN	500 to 559
DAY	600 to 1759
DUSK	1800 to 1859
NIGHT	1900 to 459

4.4 Set Game Length

The players may select a game length of either 1, 2, 3, or 4 hours. It is recommended that at least 2 hours be allowed for battles where the opposing forces start out of contact. When the game ends, players may elect to continue the game if they so desire. If a game is continued, the computer will stop the game after 30 additional minutes have been completed.

4.5 Set Visibility Level (VL)

A visibility level from 1 to 9 may be selected. A VL of 1 would represent poor visibility conditions such as fog while a VL of 9 would represent excellent visibility conditions.

The VL is used in conjunction with the time of day to determine the range at which ships may sight each other as follows:

NIGHT	VL × 2 = visibility range
DUSK & DAWN	VL × 3 = visibility range
DAY	VL × 4 = visibility range

4.6 Air/Sea Control Over Battle Area

Air/sea control over the battle area may be either Allied, Axis or Neutral. If a player has air/sea control then his opponent will score fewer points for damaging ships. See 14.0 for air/sea control in historical scenarios.

4.7 Set Damage Control Levels

Damage control abilities must be set for both the Axis and Allied forces. A number from 1 to 4 must be selected for each player. The higher the number selected, the better the players' ships will be at avoiding magazine explosions, repairing damage, and putting out fires.

The historical damage control values are as follows:

WWI	BRITISH	1914 – 1916	1
		1917 – 1918	2
	GERMAN	1914 – 1915	2
		1916 – 1918	4
WWII	BRITISH		3
	FRENCH		2
	ITALIAN		2
	GERMAN		4

See 14.0 for damage control levels in the historical scenarios.

4.8 Selecting the Type of Action

The players may select from 5 different types of battle:

Axis Transport
The Axis player scores points for 'exiting' cargo (AK) ships off the west map edge. Both players score points for damaging or sinking enemy ships.

Axis Bombardment
The Axis player scores points for exiting combat ships off the west map edge. Both players score points for damaging or sinking enemy ships. Points scored for exiting are determined by the size and number of main guns on the ship.

Battleline
Players score points only for damaging or sinking enemy ships.

Allied Bombardment
The Allied player scores points for exiting combat ships off the east edge of the map. Both players score points for damaging enemy ships.

Allied Transport
The Allied player scores points for exiting cargo ships (AK only) off the east edge of the map. Both players score points for damaging or sinking enemy ships.

4.9 Selecting a Large or Small Battle

The number of ship selection points (SSPs) that a player may use to buy his force is determined by the type of action and the size (large or small) of the battle. Listed below are SSPs provided for each type of battle:

	LARGE	SMALL
Transport	360/320	180/160
Bombardment	480/400	240/200
Battleline	1200 (600)	600 (300)

( ) = *World War II only*

When two numbers divided by a '/' are shown, the first number is the number for the player attempting to exit ships and the second number is for his opponent.

When selecting small bombardment or transport type actions, the players may not include battleships or battlecruisers in their forces.

The SSPs shown above are for battles fought at handicap level 3 (see 3.3).

4.10 Selecting Ships

The Allied player may select from 53 different British and French ships from WWII and 44 different British ships from WWI. The Axis player may select from 27 different German and Italian ships from WWII and 36 different German ships from WWI. If the auto-select option is used then the computer will select a force to suit the type of battle. When using auto-select the computer will sometimes exceed the SSP limit (this will happen when selecting both human and computer forces).

The computer will only allow the selection of ships that were available during the year selected as the time of the battle. The computer will decide the radar level/gun director for each ship based on the year of the scenario and a random factor. No points are awarded for unused SSPs, so the players should find a way to spend them all. Each player is limited to selecting a maximum of twenty ships.

5.0 DEPLOYMENT PHASE

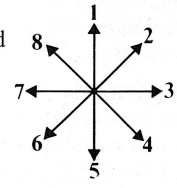
During the deployment phase, the players may alter the starting location, speed, and facing of their ships. Also, utilities may be employed to change a ship's starting division, rename the ship and even alter the ship's characteristics (such as number of guns, radar, speed, etc.). The computer will never alter its automatically generated deployment, and will never modify a ship. When playing a scenario against the computer, you should accept the deployment created by the computer. Players may agree between themselves on allowed deployment changes.

If you have created a map, be sure to check the deployment of both sides' forces; otherwise, they may be deployed on land.

5.1 Map Menu

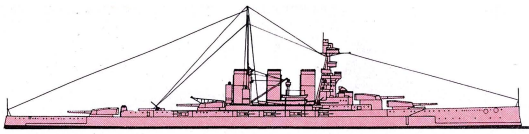
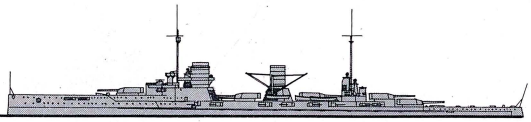
The deployment phase starts with the map menu displayed in the text window below the map display. The following items are included on the menu:

(1–8) Move cursor
By pressing the keys 1–8 the cursor may be moved around the map. The map may scroll if the cursor is moved to the edge of the screen display.



(A–?) Select ship
Ships are assigned an ID letter (A, B, C, . . .). By pressing a key that corresponds to an active ship the computer will shift to the ship display menu and the selected ship will be displayed.

(U) Change terrain
Allows the player to change the type of terrain in the square covered by the cursor (see 15.0).

(Z) Get ship
Allows the player to select a friendly ship in the square covered by the cursor. The computer will shift to the ship display menu.

(X) Exit
Allows the player to exit the deployment phase.

5.2 Ship Display Menu

Ship status data will be displayed at the top of the ship display menu. An example of the ship status data is shown here:

E BB BISMARCK C:180 S:15 D:2L

E	ship ID
BB	ship type
BISMARCK	ship name
C:180	ship course
S:15	ship speed
D:2L	ship division; the 'L' means the Bismarck is the lead ship

Below the ship data the following menu items are listed:

(M)ove
By pressing the (M) key the current ship will be moved to the cursor location.

(L)ook
By pressing the (L) key the cursor will move to the current ship's location.

(C)ourse
By pressing the (C) key the player may then enter the desired starting course for the current ship (0–358). The computer will only store even numbered values for ship course.

(S)peed
By pressing the (S) key the player may then enter the desired starting speed for the current ship.

(D)ivision
By pressing the (D) key the player may then enter the starting division number (1–9) for the current ship.

(R)ename
By pressing the (R) key the player may then change the name of the current ship. The new name may be no longer than 14 letters in length. Ships start the game with their class name.

(W)eapon
By pressing the (W) key the player may then enter the ship's data file and change some or all of the ships characteristics (see 16.0).

(N)ext
By pressing the (N) key the computer will search for the next friendly ship which will become the new current ship.

(X) Exit
The computer will exit the ship display menu and return to the map menu.

6.0 ORDERS PHASE

Players may stop the action phase and enter the orders phase by pressing the (O) key. The computer will shift to the orders phase at the end of the current 2-minute action segment.

6.1 Command Modes

There are two different ways to control ships in the game. In division mode the players give general orders to groups of ships. In ship mode the players give specific orders to individual ships. The players may toggle back and forth between the different command modes during the orders phase. The command mode last chosen during the orders phase will be active during the action phase.

6.2 Map Menu

At the start of the orders phase, the map menu will be displayed in the text window at the bottom of the map display.

(1–8) Move cursor

(A–?) Select ship
This option is only available when in ship mode. The computer will shift to the ship menu for the selected ship.

(V) Division
By pressing the (V) key the player may then enter a number (1–9) of an active division. The computer will shift to the division menu for the selected division.

(W) Command mode
By pressing the (W) key the player may change to a different command mode.

(X) Exit
By pressing the (X) key the player may exit the orders phase.

(Z) Get ship
By pressing the (Z) key the player may select the friendly ship at the cursor location. The computer will shift to the ship menu for the selected ship. This option is only available in ship mode.

(0) Score
By pressing the (0) key the player may view the points scored thus far for exiting, damaging, and sinking ships.

6.3 Division Menu

The player may check the current division orders by examining the data listed at the bottom of the text window. An example of the divisional orders data is shown below:

HOLD FIRE C:134 S:25 F:L

HOLD FIRE	All ships in the division have orders to hold their fire.
C:134	The division has been assigned a course of 134 (southeast).
S:25	The division's ships have been assigned a speed of 25 knots.
F:L	The division's ships have been ordered to assume line formation.

The following menu options may be used to modify the current divisions orders or examine its ships:

(H)old fire
Instructs the division to hold its fire. Ships will not fire guns or torpedoes when this order is in effect.

(T)orpedo fire
Instructs the division to fire torpedoes only. Ships will not fire guns when this order is in effect. The division's ships will fire torpedoes when the computer judges it wise to do so.

(G)un fire
Instructs the division to fire guns only. Ships will not fire torpedoes when this order is in effect.

(O)pen fire
Instructs the division to fire both guns and torpedoes.

(S)peed
By pressing the (S) key the player may change the assigned division speed.

(C)ourse
By pressing the (C) key the player may alter the assigned division course or heading.

(F)ormation
By pressing the (F) key the players may alter the division's current formation. The division may be in either line or parallel formation (see 7.4).

(E)xamine ships
By pressing the (E) key the player may examine each ship in the division. The computer will shift to the ship menu starting with the division's lead ship.

(X) Exit
By pressing the (X) key the player may return to the map menu.

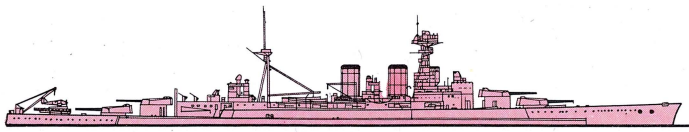
6.4 Ship Menu

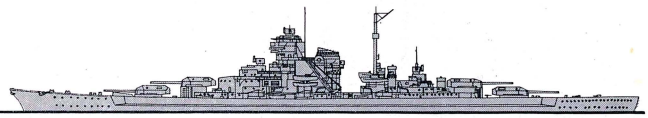
Ship status data will be listed at the top of the text window. An example of the data is shown below:

A CA KENT C:120 S:20/32 D:1L

A	the ship has ID letter 'A'
CA	the ship type is 'CA'
KENT	the ship name is KENT
C:120	the ship's course is 120 or ESE
S:20/32	the ship's current speed is 20 knots, maximum speed is 32 knots.
D:1L	the ship is in division 1 and is the lead ship.

The ship menu contains the following routines:





(W)eapons
By pressing the (W) key the player may view all of the ship's weapons. A sample weapons display is shown below:

CA KENT

2 × 8/50 GUN	F:BOW	A:155
2 × 8/50 GUN	F:BOW	A:155
2 × 8/50 GUN	F:STERN	A:155
2 × 8/50 GUN	F:STERN	A:155
4 × 4/40 GUN	F:LEFT	A:250
4 × 4/40 GUN	F:RIGHT	A:250
4 × MK-IX TORPEDO	F:LEFT	A:4
4 × MK-IX TORPEDO	F:RIGHT	A:4

ARMOR: B4 D2 T2/0

RADAR: 0 PROPULSION: 32

FLOTATION: 29

In the above example, the KENT has a main armament of 8 eight-inch, 50 caliber guns (in 4 double turrets) with 155 rounds of ammo per gun. The secondary armament consists of 8 four-inch, 40 caliber guns with 250 rounds of ammo per gun. The torpedo armament consists of 8 MK-IX torpedo tubes with 1 reload per tube.

Also listed on the weapons display, the ship's armor protection consists of: B4 D2 T2/0 meaning 4 inches of belt armor, 2 inches of deck armor, 2 inches of primary turret armor, and 0 inches of secondary turret armor. The ship has no radar and engine propulsion is capable of 32 knots. The ship has a flotation rating of 29.

(D)amage
By pressing the (D) key the player may view the ship's damage. Flooding damage, electrical damage, and bridge damage will be expressed as a percentage. Rudder damage will be expressed as a percentage, unless the rudder is jammed or detached. Fires will be expressed numerically, with the larger the number, the greater the fire. When a ship's fire control is knocked out, the damage display will display KO. Any number displayed next to fire control is the radar level of the ship.

(K) Smoke
By pressing the (K) key the player may cause the current ship to 'make smoke'. An 'S' will be displayed on the ship display next to the ship's division number. If the ship is already making smoke then pressing (K) will turn off the smoke. Only DD's, DE's, and TB's may make smoke. In WWI scenarios, CL's may make smoke.

(G) Target
By pressing the (G) key the player may view the ship's current target. The computer will display the type of target being engaged, the target size, the range to the target, and whether or not the target is 'ranged in' (and if so, by what method of fire control).

(C)hange division
This command may only be used while in division mode. The player may assign the current ship to any division (1–9).

(S)peed
This command may only be used while in ship mode. The player may assign a new speed to the current ship.

(C)ourse
This command may only be used while in ship mode. The player may assign the current ship a new course or instruct it to 'follow' another friendly ship.

(T)orpedo
This command may only be used while in ship mode. The player must determine if a slow or fast torpedo speed setting is used, aim the torpedo mount at a particular point on the map and then fire a salvo consisting of some or all of the mount's torpedoes.

(V)isual
This command may only be used while in ship mode. This routine may be used to select an enemy ship as a target using visual fire control.

(R)adar
This command may only be used while in ship mode. This routine may be used to select an enemy ship as a target using radar fire control.

(L)ook
When the (L) key is pressed the cursor will move to the current ship's location.

(N)ext
When the (N) key is pressed the computer will display the 'next' friendly ship.

(X) Exit
When the (X) key is pressed the computer will return to the division menu if in division mode or the map menu if in ship mode.

7.0 MOVEMENT

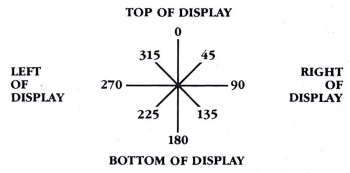
7.1 Movement Rate
Each square on the map is 1000 yards across. The game is scaled such that a ship travelling at 30 knots will enter a new square every minute. Ships moving diagonally will take longer (based on the angle) to move one square.

7.2 Changing Speed
When ships are assigned a new speed, their current speed will be gradually increased or decreased until it equals the assigned speed. The rates of acceleration and deceleration are shown below:

	ACCELERATION	DECELERATION
BB, BC, OBB	1 kpm	40% per min
CA, CL, CLAA, AC	2 kpm	55% per min
DD, DE, TB	4 kpm	55% per min

Ships in division mode will always change speed at the BB rate.

7.3 Course and Turning
Ships may travel on any courses with even numbers between 0 and 358. The following diagram shows the relationship between the course number and your display:



When ships are assigned a new course, their current course will be gradually changed until it equals the assigned course. The rates that ships change course are shown below:

1. DD, DE, TB	48 per min
2. BB, BC, CA, CL, CLAA, OBB, AC	32 per min
3. DIVISION MODE	32† per min
4. RUDDER DAMAGE > 25% or BRIDGE DAMAGE > 49%	20 per min
5. RUDDER DETACHED	12 per min

Undamaged ships in ship mode will use the turn rates shown on lines 1 or 2. Undamaged ships in division mode will use the rate shown on line 3. Ships with a damaged bridge or rudder will use the rates shown on lines 4 or 5.

7.4 Moving in Formation
In division mode only, ships will move in formation. Divisions may be assigned either line or parallel formation.

In line formation, the lead ship will assume the division's assigned course, the second ship will follow the lead ship, the third ship will follow the second, etc. A ship that is more than one square away from the ship which it is following will speed up (if possible) and attempt to catch up to the leading ship. Ships within one square of the ship they are following will set their speed to match that of the ship they are following.

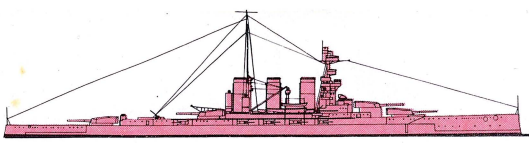
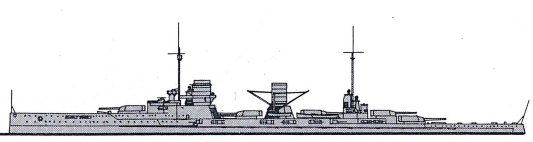
Ships in division mode will always have their course rounded to the nearest 45° increment for movement purposes, although the ship display will show the unrounded number. Example: A ship in division mode with an ordered course of 200° will actually move in course 180°. This will enable ships to maintain line formations.

In parallel formation, all ships in the division will assume the division's assigned course.

7.5 Running Aground
A ship that moves into a land square will immediately have its propulsion reduced to 0. There are no other effects from running aground. This propulsion loss is permanent.

7.6 Collisions
Ships in the same square may collide with one another if at least one ship is going at least 10 knots. Ships travelling on the same course will have a greatly reduced chance of collision. Ships will usually not collide with the ship they are following. If a collision occurs, both ships will be reduced in speed to less than 10 knots and will suffer damage based on the size of the ships and their speed at the moment of collision.

† The lead ship in a division in line formation will only be able to turn 24 per minute if the player is in division mode.

8.0 GUNFIRE

8.1 Selecting Targets for Gunfire

When using division mode, ships will automatically select targets for gunfire if their division has been assigned gun fire or open fire instructions.

When using ship mode, the players may select targets for individual ships by using the visual or radar commands on the ship menu. Ships with a radar rating of zero and ships with their fire control destroyed may not use radar target selection. Ships using the visual routine to select their targets will employ visual fire control and use the visual gunfire accuracy modifiers. Ships using the radar routine to select targets will employ radar fire control and use the radar gunfire accuracy modifiers. No radar is available during WWI scenarios.

8.2 Gunfire Accuracy

The probability of a gunshot hitting its target is equal to $1/a$ where a represents the 'inverse gunfire accuracy' of a particular gunfire. The list of accuracy modifiers used to calculate a are shown below:

FC	EFFECT	DESCRIPTION
all	add	target speed / 2
all	add	target turn* / 2
all	add	firer speed / 2
all	add	firer turn* / 2
V	add	10, if other ships firing at target
V	add	30, if ranging in
V	add	30, if range > visibility / 2
R	add	30, for radar fire control

AFTER ALL ADDITIONS HAVE BEEN MADE, THE FOLLOWING MULTIPLIERS MAY BE APPLIED:

all	×	½, if crossing the target ship's 'T'
all	×	(10 − RADAR or GUN DIRECTOR) / 10, × 2 if fire control/gun director is KO'd
all	×	RANGE / GUN MAX RANGE
V	×	½, if ranged in

AFTER ALL MULTIPLIERS HAVE BEEN APPLIED:

all	add	5
all	add	5, if CA, CL, CLAA, AC, AK target
all	add	25, if DD, DE, TB target

V = visual fire control only
R = radar fire control only

Note that round off errors of ±1 may occur.

The probability of a gunshot hitting will never be worse than 1/230.

8.3 Ranging In

Ships using visual fire control must spend at least 1 turn of 'ranging in' fire before firing for full effect. Ships succeed in ranging in if accuracy (a) × RND < 50. During a ranging fire turn, ships will only fire 1 shot per gun.

Ships using radar fire control are never required to range in.

8.4 Ammo Use

The number of shells fired per gun is equal to 1 + ammo / 50. The ammo number shown on the weapons display represents the number of rounds remaining for each gun. Ships ranging in on a target will fire only 1 shot per gun.

8.5 Gun Hit Location and Armor Penetration

When a ship is hit by gunfire, the computer will determine the section of the ship that was hit and calculate the chance of the shell penetrating the armor. Possible hit locations are listed below:

1. NEAR MISS
2. BELT HIT
3. DECK HIT
4. SUPERSTRUCTURE HIT (side or top)
5. PRIMARY TURRET HIT (side or top)
6. SECONDARY TURRET HIT (side or top)
7. TERTIARY TURRET HIT
8. TORPEDO MOUNT HIT

Shell hits that penetrate a ship's armor can cause significant damage to the ship. To determine if a shell penetrates, the gun's adjusted penetration rating (APR) must be compared to the armor protecting the hit location. If the APR is greater than the ship's armor, the hit automatically penetrates. If the APR is equal to the ship's armor, the hit has a 50% chance of penetrating. A ship's armor is listed on the weapons display section of the ship menu. Superstructure side armor is the same as belt armor. Superstructure top armor is the same as deck armor. Turret top armor is equal to ⅓ of the turret side armor listed on the display. Tertiary turrets and torpedo mounts are unarmored. Possible damage caused by a near miss is determined by comparing the shell size (not penetration) to the belt armor.

Each shell hit has a 10% chance of hitting a weak spot in a ship's armor. When a weak spot is hit, the defending ship's armor is multiplied by 0.5 when determining the penetration of the shell hit.

Two APRs are calculated for each gunfire, horizontal and vertical penetration. Vertical penetration is used against deck, superstructure top and turret top armor. Horizontal penetration is used against all other armor.

P = GUN PENETRATION RATING
R = RANGE TO TARGET
M = GUN MAXIMUM RANGE

vertical penetration = 1 + (P × R) / (M × 4)

horizontal penetration
= 1 + ((1 + M − R) × P) / (M × 2) + P/2 − (P × R) / (M × 4)

Vertical penetration may be reduced for certain shell sizes:

SHELL SIZE	6	× ⅔
	3–5.5	× ⅓

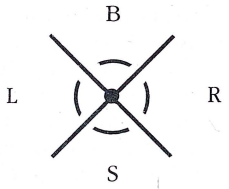
As the range increases, the likelihood of a hit striking deck or top armor increases.

8.6 Weapon Facing

Weapons (both guns and torpedoes) on a ship may have 5 possible facings:

1. BOW
2. CENTER
3. LEFT
4. RIGHT
5. STERN

Weapons with the wrong facing relative to the target will be unable to fire at that target. A facing diagram is shown below:



The above diagram represents the field of fire of a ship travelling on course 0. The field is divided into four 90 degree arcs labeled B, L, R, S.

1. Bow faced guns may not fire at targets in the 'S' arc.
2. Center faced guns may not fire at targets in the 'B' or 'S' arcs.
3. Left faced guns may *only* fire at targets in the 'L' arc.
4. Right faced guns may *only* fire at targets in the 'R' arc.
5. Stern faced guns may not fire at targets in the 'B' arc.

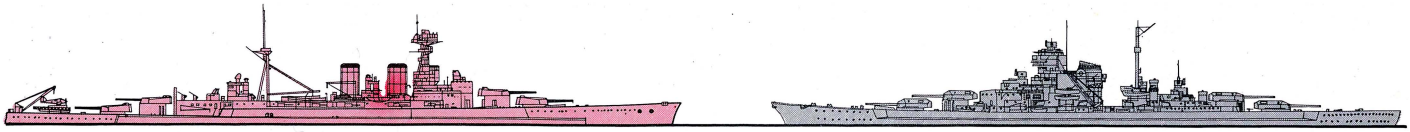
8.7 Secondary Targets

In many situations, a ship has certain gun mounts that are unable to 'face' the ship's primary target. In these situations the gun mount will fire at the nearest visible enemy ship that it can face. Secondary and tertiary gun mounts, such as the 5 inch turrets on battleships and cruisers, will always fire at the nearest visible enemy ship that can be faced.

8.8 Crossing the T

A ship's T is crossed if it is being fired at by an enemy ship from within either of the areas shown below:

* The difference between the ship's current course and its assigned course. Ships following other ships consider their assigned courses to be that which aims them directly at the ship they are following.



8.9 Gun Data

Twenty-nine different gun types are included for each war. Gun ratings are listed below:

WWI GUN DATA CHART

ID	DESCRIPTION	SIZE	RANGE	PEN
6	15/45	21	26	24
7	15/42	25	25	23
8	14/50	18	26	23
9	13.5/45	18	21	20
10	13.5/45	16	23	18
11	12/50	13	23	17
12	12/50	11	24	16
13	12/45	11	17	14
14	12/40	11	15	12
15	11/50	10	21	14
16	11/45	9	23	13
17	11/40	8	19	12
18	10/45	7	16	11
19	9.2/50	6	18	10
20	9.2/45	6	16	9
21	9.2/40	6	14	8
22	8.2/45	6	21	9
23	8.2/40	6	14	8
24	7.5/50	5	20	8
25	6/50	4	22	7
26	6/50	4	12	6
27	6/45	4	15	5
28	5.9/45	4	19	7
29	5.9/45	4	13	6
30	5.5/50	4	11	5
31	4.7/45	3	16	4
32	4.1/45	2	14	4
33	4/50	1	11	4
34	3.5/45	1	11	4

WWII GUN DATA CHART

ID	DESCRIPTION	SIZE	RANGE	PEN
6	16/45	27	40	25
7	15/47	27	39	26
8	15/45	22	43	24
9	15/42	22	32	23
10	15/42	22	25	23
11	14/50	18	36	23
12	13.4/52	17	29	21
13	13/52	16	38	21
14	12.6/44	15	32	18
15	12/45	14	28	17
16	11/55	12	39	18
17	8/60	6	37	10
18	8/50	6	30	8
19	6.1/55	4	28	7
20	6/50	4	25	7
21	6/45	4	15	7
22	5.9/55	4	26	7
23	5.5/50	4	18	6
24	5.5/45	4	24	6
25	5.3/45	4	22	5
26	5.25/50	4	22	5
27	5.1/40	3	19	4
28	5/45	3	18	4
29	4.7/50	3	17	4
30	4.5/50	3	17	4
31	4.1/65	2	18	4
32	4/40	2	16	3
33	3.9/60	2	18	4
34	3.5/76	1	13	3

The gun description consists of two numbers: gun barrel size in inches / gun caliber. Numbers listed in the SIZE column represent the weight of the shell. Numbers listed in the RANGE column reflect the range of the gun in 1000s of yards. Numbers listed in the PEN column reflect the armor penetration effectiveness of the gun.

8.10 Combat Gunfire Display

When one ship fires its guns at another ship during the action phase, a message such as the one below will be displayed:

BB UNDER FIRE FROM 16/45 GUNS
ACCURACY: 1/38 PEN 20 2
BELT HIT *
PRIMARY TURRET HIT

In the previous example, a battleship is being fired at by a turret of 16/45 guns, with each shell fired having a 1 in 38 chance of hitting. The shells have a horizontal penetration capability of 20 and a vertical penetration capability of 2. The firing ship has scored two hits, the first penetrating the belt armor (an * indicates penetration; a second * indicates flotation damage), the second bouncing off the armor of a primary turret. There will be no delay after the display of a non-penetrating hit.

9.0 TORPEDOES

9.1 Torpedo Salvoes

Torpedoes are fired in salvoes of 1 or more torpedoes. All torpedoes in a salvo move together. When a salvo enters a square occupied by a ship, each torpedo will have a chance of hitting the ship.

9.2 Torpedo Intercept Angle

The torpedo intercept angle (IA) is important in determining the chance of torpedoes hitting the ship. The IA is calculated by comparing the torpedoes' course to that of the ship they are attacking.

IA = ABS (TORP COURSE − SHIP COURSE)
If IA > 180 then IA = IA − 180
If IA > 90 then IA = 180 − IA

EXAMPLE: TORPEDO COURSE = 300
SHIP COURSE = 20
ABS (300 − 20) = 280
280 > 180 so: 280 − 180 = 100
100 > 90 so: 180 − 100 = 80
IA = 80

9.3 Torpedo Hit Probability

Each torpedo in a salvo will have a chance of hitting a ship in the same square. The chance of a torpedo hit is calculated using the IA, ship evasion capability and torpedo speed:

Ship Evasion (EV) = 225 for DD, DE, TB
135 for all others

If ship speed < 10 then EV = EV × SPEED / 10
HIT% = TORP SPEED × (IA + 5) / EV

The HIT% formula above shows that the larger the IA, the better the chance of a torpedo hit.

9.4 Dud Torpedoes

Torpedoes that hit a ship and explode will cause significant damage to the ship. Ten percent of all torpedoes will be duds that do not explode. Dud torpedoes will cause no damage.

9.5 Torpedo Symbols

For solitaire games, only the human-fired torpedoes will be visible but the computer-fired torpedoes will not.

9.6 Torpedo Data

There are 5 different types of torpedoes included for each war. Torpedo ratings are listed below:

WWI TORPEDO DATA CHART

ID	DESCRIPTION	SIZE	SPEED	RANGE
1	23.7"	15	25/45	16/9
2	21"	10	25/45	11/6
3	19.7"	9	25/40	11/6
4	18"	7	25/35	7/5
5	14"	5	25/35	6/4

WWII TORPEDO DATA CHART

ID	DESCRIPTION	SIZE	SPEED	RANGE
1	G7A	8	30/44	15/7
2	SI-270	7	29/40	13/7
3	MK-IX	9	35/41	15/11
4	23DT	8	35/39	14/10
5	W-200	5	30/44	9/4

The numbers listed in the size column represent the size of the torpedo warhead. There are two numbers listed for both the speed and range of the torpedo. The first number is the speed or range of the torpedo at the 'slow setting' and the second number is the speed or range of the torpedo at the 'fast setting'.

9.7 Torpedo Combat Displays

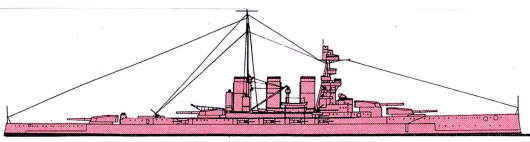
Whenever a torpedo enters a square occupied by an enemy ship, a message will be displayed stating the class of the ship being attacked, the course of the torpedoes, and any hits scored by the torpedoes. The display will also state any dud torpedo hits.

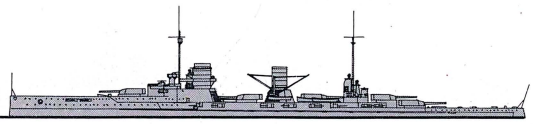
10.0 SEARCHING

Every two minutes of game time, ships will perform both radar (if available) and visual searches to locate and target enemy ships.

10.1 Search Procedure

The search segment occurs at the end of each two minutes of the action phase. At the start of the search segment all ships will become 'unsighted'. During the search segment each ship may search and sight any enemy ship within detection range.





10.2 Visual Search

To determine if an enemy ship (target) is within visual detection range, the following formula is used:

V = VISIBILITY
R = RANGE TO TARGET
SS = SEARCHER SIZE (FLOTATION)
TS = TARGET SIZE (FLOTATION)
TF = TARGET FIRE LEVEL
DR = DETECTION RANGE

POOR VISIBILITY DETECTION (V < 21):

DR = V + TF
+5 if target is firing
+5 if target is under fire

GOOD VISIBILITY DETECTION (V > 20):

DR = 10 + V/2 + SS/20 + TS/20 + TF
+5 if target is under fire

If DR >= R then the target is sighted.

10.3 Radar Search

Only ships with a radar rating greater than zero may perform a radar search. The formula for radar detection is shown below:

RR = RADAR RATING

RADAR DETECTION

DR = 10 + RR × 10
if DR > R then DETECTION except
if R > DR/2 and TS < R then
NO DETECTION

10.4 Smoke

A ship cannot see *through* a square in which another ship is making smoke. However, ships can see *into* and can see *out of* a square containing a ship making smoke. Ships may always use radar to see and fire through smoke. Smoke exists only in a square containing a ship making smoke.

10.5 Land

Ships may not see through full land (terrain type N; see section 15.2) squares (visually or with radar), but they may see through partial land squares (terrain types B-M).

11.0 DAMAGE

Ships may be damaged when hit by torpedoes or gunfire. Ships may receive additional damage from uncontrolled fires and flooding. All damage is cumulative.

11.1 Torpedo Damage

When a torpedo explodes against a ship, the following types of damage may be expected:

FLOOD% =
(1 + WARHEAD × RND) / FLOTATION
FIRE + 4 × RND

In addition, the following types of damage are probable:

50% chance PROPULSION − 5 knots
30% chance PROPULSION −10 knots
20% chance RUDDER DAMAGE =
25 + 75 × RND

20% chance above damage DOUBLED
4% chance above damage TRIPLED

11.2 Gunfire Damage

The types of damage caused by gunfire will vary with the location and armor penetration. Shots that fail to penetrate the armor will have a chance of adding 1 to the fire level; this percentage chance is equal to 5 + (.95 × SHELL SIZE / 2) (i.e., an 8/55 shell will have a 7.85% chance of adding one to the fire level), but will cause no other damage.

S = SHELL SIZE
R = RANDOM NUMBER between 0 and 1
F = TARGET FLOTATION

Near Miss
If S × R < BELT ARMOR then no effect
otherwise FLOOD% = 3 × R / F

Belt Hit
60% FLOOD% = 1 + R × S / 2 × F
5% FLOOD% = 1 + R × S / F
and PROPULSION − 5 knots
15% PROPULSION − 5 knots
5% RUDDER DAMAGE = 25 + S × R
13% FIRE + 1
2% MAGAZINE EXPLODES

Deck Hit
15% FLOOD% = 1 + R × S / 2 × F
10% FLOOD% = 1 + R × S / F
and PROPULSION − 5 knots
5% RUDDER DAMAGE = 25 + S × R
20% PROPULSION − 5 knots
46% FIRE + 1
4% MAGAZINE EXPLODES

Superstructure Hit
15% BRIDGE DAMAGE = 25 + 5 × S × R
15% FIRE CONTROL/GUN DIRECTOR/
RADAR KO'D
5% ELECTRIC DAMAGE = 10 × S × R
65% FIRE + 1

Turret Hit
100% TURRET KO'D

Chance of MAGAZINE EXPLODING from a turret hit is:

WWI = 1 / (2 × DC)
WWII = 1 / (2 × DC × DC)
DC = damage control rating

11.3 Fire Damage

Uncontrolled fires on a ship may cause damage to ship systems. Additional damage may occur on a burning ship every two minutes if RND × 20 < fire level.

Fire Damage
20% WEAPON KO'D
50% FIRE + 1
15% PROPULSION − 5 knots
5% BRIDGE DAMAGE + 10
5% FC/RADAR KO'D
4% ELECTRIC DAMAGE + 25
1% MAGAZINE EXPLODES

11.4 Flood Damage

Ships with uncontrolled flooding may suffer additional damage to ship systems.

If FLOOD% > 25 and RND × 10 < 2
then additional FLOOD% DAMAGE =
1 / FLOTATION = 2

If FLOOD% > 50 then additional
ELECTRIC DAMAGE = 25 × RND

11.5 Repairs

At the start of each two-minute segment, a ship's damage control parties will have a chance to repair damage. The ability to repair damage will be affected by the damage control rating (DC) assigned when building the scenario.

Repairs
5% FLOOD% − 1 / FLOTATION × 2
15% FIRE − 1
5% ELECTRIC DAMAGE − 10
5% BRIDGE DAMAGE − 10
3% JAMMED RUDDER DETACHED
3% RUDDER DAMAGE − 25

The chances of repair listed above will be multiplied by the player's DC rating. Thus a player with a DC rating of 3 will have a 45% chance of reducing the fire level on his ships every 2 minutes.

12.0 DAMAGE EFFECTS

A ship's damage will reduce its combat effectiveness and, in the case of severe flooding, cause it to sink.

12.1 Fire Effects

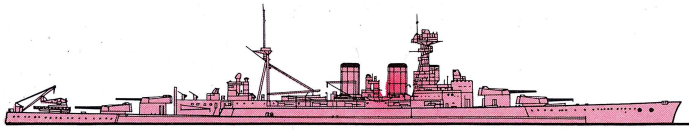
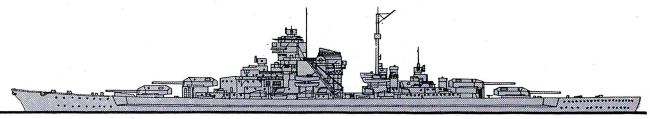
Uncontrolled fires burning on a ship may cause additional damage to ship systems (see 11.3).

12.2 Flooding Effects

Heavy flooding may cause additional damage to ship systems (see 11.4). At the start of each 2-minute segment, a ship with 100% flood damage will have a 10% chance of sinking (the ship will automatically sink if the fire level is greater than two times the ship's flotation rating). Flooding will proportionately reduce a ship's maximum speed. For example, a ship with propulsion of 30 knots and 50% flood damage will have a maximum speed of only 15 knots. If the flood damage is repaired then the maximum speed will increase towards the propulsion rating.

12.3 Electric Damage

Damage to a ship's electric system will affect its ability to fire its weapons or use radar. Ships with greater than 49% electric damage will be unable to fire guns or torpedoes, or use radar. Ships with less than 50% damage will randomly use or lose electric power during each two-minute segment. For example, a ship with 25% electric damage will have a 50% chance of losing electric power during each 2-minute segment (damage × 2 equals chance of failure).

12.4 Bridge Damage
Ships with bridge damage greater than 49% will have their ability to maneuver impaired (see 7.3).

12.5 Rudder Damage
Ships with rudder damage between 26% and 49% and ships with their rudder 'detached' (DT) will have their ability to maneuver impaired (see 7.3). Ships with rudder damage greater than 49% will have their rudder 'jammed' in a particular direction, either left (JL), right (JR), or straight ahead (JS). Ships with a jammed rudder must move or turn in the direction the rudder is jammed. During the repair segment a jammed rudder may be either repaired, detached, or jammed in a different direction.

12.6 Fire Control/Gun Director and Radar Damage
When a ship's fire control is KO'd, its radar or gun director will also be KO'd. Ships with fire control KO'd will have their gunfire accuracy halved. Fire control, radar, and gun director may not be repaired during the game.

12.7 Propulsion Loss
Propulsion loss represents a reduction in a ship's maximum speed. Propulsion systems may never be repaired during the game.

12.8 Magazine Explosion
Magazine explosions in the game are usually fatal. 100% flooding and 100 fire levels are added by a magazine explosion.

12.9 Weapons Mount KO'd
Weapon mounts (gun or torpedo) KO'd may not be repaired during the game. When a torpedo mount is destroyed, its ammo will be set to 0.

13.0 SCORING
Points may be scored for damaging or sinking enemy ships and sometimes for exiting ships off a particular map edge.

13.1 Points for Ships Sunk
Points scored for sinking enemy ships is equal to the ship selection points (SSPs) required to buy the ship. Points will be doubled for sinking transport (AK) ships.

13.2 Points for Ships Damaged
Points scored for damaging enemy ships varies with the level of damage and the SSP value of the ship.

F = FLOTATION
d% = DAMAGE LEVEL
P = PROPULSION

d% = FIRE / F + FLOOD%
  If RUDDER JAMMED or DETACHED
    then d% + .25
  If P < 15
    then d% + ((15 − P) / 15)
  If d% > 0.9 then d% = 0.9

POINTS SCORED = d% × SSP
If damaged ship has air cover
  then POINTS × 5/9
If damaged ship is a transport (AK)
  then POINTS × 2

13.3 Points Scored for Transport
In Transport scenarios, the attacking player scores 50 points for exiting each transport (AK) ship off a particular map edge. The Axis player must exit his transports off the west map edge to score points. The Allied player must exit his transports off the east edge to score points. No points are scored if the transport has a fire level greater than 4.

13.4 Points Scored for Bombardment
In Bombardment scenarios the attacking player scores points for exiting combat ships off a particular map edge. The number of points scored varies with the number and size of the ship's main guns.

BB, BC, OBB	8 per main gun
CA, AC	4 per main gun
CL	2 per main gun
CLAA, DD, DE, TB	1 per gun

The Axis player may only score points for exiting ships off the west map edge. The Allied player may only score points for exiting ships off the east map edge.

13.5 Victory Conditions
The player scoring the most points is considered the victor. In bombardment scenarios, the bombarding player must score at least twice the number of points as the defending player in order to win (if he does not, the defending player is the victor).

14.0 SCENARIOS

14.1 Falkland Islands – December 8, 1914
Scenario: Battleline
Sea Control: Allied
Axis Damage Control Rating: 2
Allied Damage Control Rating: 1
Game Length: 2 hours

Historical Notes: On November 1, 1914, Admiral Graf von Spee had easily defeated a British squadron of two old armored cruisers and a light cruiser under the command of Admiral Cradock. This fight off the west coast of South America was known as the Battle of Coronel. Now, in the early morning of December 8, 1914, he approached the British coaling station in the Falkland Islands. Unknown to the Admiral von Spee, the British Admirality had dispatched Admiral Sturdee, with two battlecruisers, to the South Atlantic to hunt down Spee. When the Germans spotted the tripod masts of battlecruisers at anchor, they reversed course and attempted to flee. Having been caught by surprise, Sturdee raised steam to pursue. Athough von Spee's armored cruisers — Scharnhorst and Gneisenau — were the gunnery champions of the German Fleet, they were out-gunned by the British battlecruisers.

14.2 Dogger Bank – January 24, 1915
Scenario: Battleline
Sea Control: Allied
Axis Damage Control Rating: 2
Allied Damage Control Rating: 1
Game Length: 2 hours

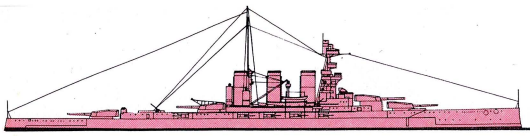
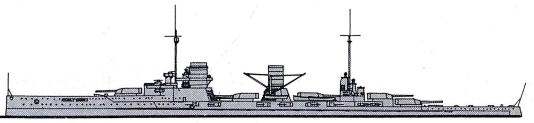
Historical Notes: Admiral von Hipper, with three battlecruisers and an armored cruiser, sailed from the Jade Estuary early on January 23rd. His orders were to raid the British patrols and fishing fleet off Dogger Bank early the next morning. The British, having intercepted and decoded his orders, alerted Admiral Beatty to sail to intercept. Beatty had five battlecruisers and the 1st Light Cruiser Squadron. At 0800, Beatty made contact with von Hipper. Hipper, realizing that his force was inferior, turned to flee. The German armored cruiser Blucher was slower than the battlecruisers, and Hipper had to either turn and fight, or flee and abandon the Blucher.

14.3 Jutland: First Contact – May 31, 1916
Scenario: Battleline
Sea Control: Allied
Axis Damage Control Rating: 4
Allied Damage Control Rating: 1
Game Length: 1 hour

Historical Notes: At 0200 on May 31st, Admiral von Hipper sailed from the Jade Estuary with the 1st and 2nd Scouting Groups of five battlecruisers and escorting vessels. He was followed by the High Seas Fleet under Admiral Scheer. The German plan called for a raid on British shipping south of Norway. By early afternoon, the German battlecruisers were 60 miles north of the German battleships. The British, once again having intercepted the German signals, sailed several hours before the Germans. Admiral Beatty, with six battlecruisers and four fast, powerful battleships, made contact with the German battlecruisers in mid-afternoon. The Germans turned south to draw the British force toward the German main fleet. Although the Germans were badly outgunned, their ships were of higher quality. During the next hour, two of the British battlecruisers — Queen Mary and Indefatigable — would be destroyed by magazine explosions.

14.4 Jutland: Death Ride of the Battlecruisers – May 31, 1916
Scenario: Battleline
Sea Control: Allied
Axis Damage Control Rating: 4
Allied Damage Control Rating: 1
Game Length: 1 hour

Historical Notes: Admiral Hipper was pursued by Beatty until the High Sea Fleet was sighted. Beatty turned north to draw the Germans toward Admiral Jellicoe and the British Grand Fleet. When the main British fleet was sighted, it was between the Ger-

mans and their base. As night began to fall, Admiral Scheer ordered Admiral Hipper's badly battered battlecruisers to lead the German Fleet into the middle of the British line.

14.5 Battle of Cape Teulada – November 27, 1940

Scenario: Battleline
Air Control: Neutral
Axis Damage Control Rating: 2
Allied Damage Control Rating: 3
Game Length: 2 hours

Historical Notes: After sinking or damaging part of the Italian Fleet by a night air raid on Taranto Harbor, the British attempted to get reinforcements through to Malta and Egypt. The British force from Gibraltar contained the battlecruiser Renown, two light cruisers and the carrier Ark Royal. From Alexandria came the battleship Ramillies, the heavy cruiser Berwick and several light cruisers. The Italians sailed with the new battleship Vittoria Veneto, the old battleship Cavour, six heavy cruisers and numerous destroyers. The two fleets were within 30 miles of each other when the Italians were attacked by aircraft from the Ark Royal. The Italians retreated before contact. This scenario assumes the Italians had not decided to retreat.

14.6 Bismarck – May 24, 1941

Scenario: Battleline
Air Control: Allied
Axis Damage Control Rating: 4
Allied Damage Control Rating: 1
Game Length: 2 hours

Historical Notes: The new German battleship Bismarck and the heavy cruiser Prinz Eugen sailed from Norway to break out into the Atlantic, intending to raid British convoys. As the Germans passed between Greenland and Iceland, they were located and shadowed by the British heavy cruisers Suffolk and Norfolk. As dawn broke on May 24th, Admiral Holland — with the battlecruiser Hood and the new battleship Prince of Wales — spotted the German Admiral Lutjens in the Bismarck. The resulting battle destroyed the Hood, but the Bismarck was damaged and had to attempt to return to France for repairs. Three days later, she would be caught and destroyed before reaching the French coast.

14.7 Channel Dash – February 12, 1942

Scenario: Battleline
Air Control: Allied
Axis Damage Control Rating: 4
Allied Damage Control Rating: 3
Game Length: 2 hours

Historical Notes: Following the loss of the Bismarck, the Prinz Eugen remained in the Atlantic, then returned to the occupied French port of Cherbourg, where the German battlecruisers Scharnhorst and Gneisenau were waiting. After being damaged from bombing, the Germans decided they had to return the three ships to Germany. The most direct route was up the Channel. Due to a number of malfunctions and errors, the British did not detect that the Germans had sailed until the Germans neared the Dover straights. If the British Home Fleet had sailed at once, they could have intercepted the Germans off the northwest coast of Holland. This scenario assumes the British had sailed with all the ships available at Scapa Flow.

14.8 Battle of Sirte – March 22, 1942

Scenario: Battleline
Air Control: Neutral
Axis Damage Control Rating: 2
Allied Damage Control Rating: 4
Game Length: 2 hours

Historical Notes: In mid-march 1942, the British attempted to run a convoy from Alexandria to Malta. Malta was under siege and was in desperate need of supplies. The British escort consisted of five light cruisers and numerous destroyers. The Italians sailed with the battleship Littorio, two heavy cruisers, a light cruiser and destroyers. The Italians never realized how weak the British escort was, as the British made extensive use of smoke. After some long range fire, the Italians withdrew. Even though the British ships survived the naval battle, most of the supply ships were destroyed by the Luftwaffe before reaching Malta.

15.0 DESIGNING CUSTOM MAPS

If the (D)ESIGN MAP option is selected (see 4.2) then the map build routine may be used to create a custom map.

15.1 Map Build Menu

The following menu options may be used to examine the map and change terrain:

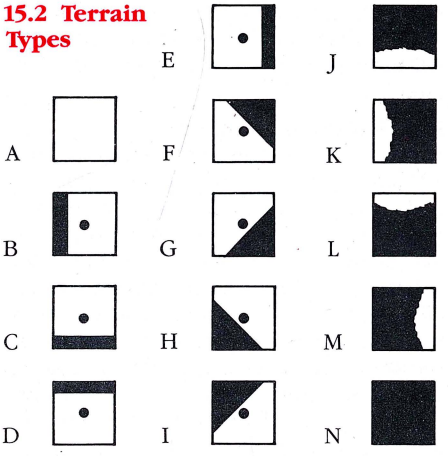
(1-8) Move cursor

(A-N) Set terrain
Each letter, A through N, represents a different terrain symbol. When a letter key (A–N) is pressed then the terrain will be altered in the square where the cursor is located.

(U) Auto shift
When auto shift is activated then the cursor location will shift one square in the selected direction (1–8) after each set terrain key has been pressed. This function is useful in reducing the number of key strokes required to create a new map.

(X) Exit
When the (X) key is pressed, the computer will exit the map build routine and enter the save routine. The map save option should be used to save your custom map to a scratch disk.

15.2 Terrain Types



16.0 MODIFYING SHIP DATA

Players may create custom ships by modifying some or all of the ship data.

16.1 Modifying Weapons Data

Ships have a maximum of 10 weapon mounts. Main guns are always listed first, secondary weapons second and tertiary weapons third. Unused mounts are always the highest numbered mounts. Secondary and tertiary turrets that have the same facing may be grouped together on one 'mount'. The number of guns/tubes per turret must be designated to determine how many guns/tubes are destroyed when a turret is KO'd. The number of guns/tubes must be evenly divided by the guns/tubes per turret, or the guns/tubes per turret will automatically be set to 1.

When changing weapon mounts, the following data elements may be altered:

1. WEAPON TYPE
Use ID numbers listed in 8.9 and 9.6 (0 = no weapon).
2. NUMBER GUNS/TUBES
3. FACING (1–5) See 8.6.
4. AMMO/TORPEDOES
5. MAIN, SECONDARY OR TERTIARY MOUNT
6. GUNS/TUBES PER TURRET
Does not apply to *main* gun turrets.

16.2 Modifing Non-Weapons Data

The following non-weapons data elements may be altered:

1. MAXIMUM SPEED
2. FLOTATION
Equals 1 + Ship Displacement* / 500 (tons).
3. RADAR/FIRE DIRECTOR (0–4)
4. BELT ARMOR (inches)
5. DECK ARMOR
6. MAIN TURRET ARMOR
7. SECONDARY TURRET ARMOR
Note: Tertiary mounts are always unarmored.
8. SHIP SELECTION POINTS
(used for scoring)

*Fully loaded (unlike WARSHIP, BATTLECRUISER statistics use fully loaded displacement figures)

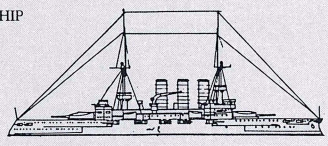
17.0 SHIP DATA

The following fourteen pages display detailed ship data for each of the 158 vessels (both Axis and Allied) included in BATTLECRUISER and are organized according to nationality and ship type. All drawings are in relative scale. Refer to pages 25 through 28 for comprehensive charts that summarize all of the information in this section.

WORLD WAR I

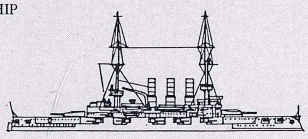
The first group of 79 ships (pages 10-16) are from World War I and represent the German and British fleets.

GERMAN OLD BATTLESHIP — WORLD WAR I



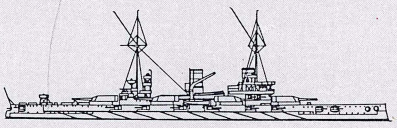
OBB BRAUNSCHWEIG
Main guns: 4 x 11"/40 **Secondary mounts:** 14 x 7.5"/50
Tertiary mounts: 14 x 3.5"/45 **Max. speed:** 18 **Flotation:** 29 **Belt armor:** 8
Deck armor: 3 **Primary turret armor:** 10 **Secondary turret armor:** 6
Ship selection points: 72 **Earliest year of availability:** 1914

GERMAN OLD BATTLESHIP — WORLD WAR I



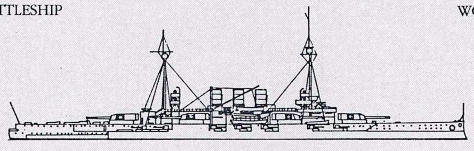
OBB DEUTSCHLAND
Main guns: 4 x 11"/40 **Secondary mounts:** 14 x 7.5"/50
Tertiary mounts: 20 x 3.5"/45 **Max. speed:** 18 **Flotation:** 29 **Belt armor:** 9
Deck armor: 3 **Primary turret armor:** 11 **Secondary turret armor:** 7
Ship selection points: 76 **Earliest year of availability:** 1914

GERMAN BATTLESHIP — WORLD WAR I



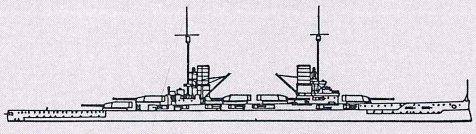
BB NASSAU
Main guns: 12 x 11"/45 **Secondary mounts:** 12 x 5.9"/45
Tertiary mounts: 12 x 3.5"/45 **Max. speed:** 21 **Flotation:** 41 **Belt armor:** 11
Deck armor: 4 **Primary turret armor:** 11 **Secondary turret armor:** 6
Ship selection points: 104 **Earliest year of availability:** 1914

GERMAN BATTLESHIP — WORLD WAR I



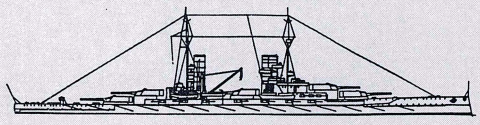
BB HELGOLAND
Main guns: 12 x 12"/50 **Secondary mounts:** 14 x 5.9"/45
Tertiary mounts: 10 x 3.5"/45 **Max. speed:** 21 **Flotation:** 49 **Belt armor:** 12
Deck armor: 4 **Primary turret armor:** 12 **Secondary turret armor:** 7
Ship selection points: 120 **Earliest year of availability:** 1914

GERMAN BATTLESHIP — WORLD WAR I



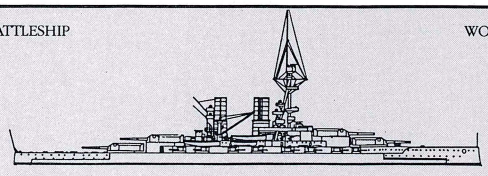
BB KAISER
Main guns: 10 x 12"/50 **Secondary mounts:** 14 x 5.9"/45
Tertiary mounts: 6 x 3.5"/45 **Max. speed:** 21 **Flotation:** 54 **Belt armor:** 14
Deck armor: 4 **Primary turret armor:** 12 **Secondary turret armor:** 7
Ship selection points: 120 **Earliest year of availability:** 1914

GERMAN BATTLESHIP — WORLD WAR I



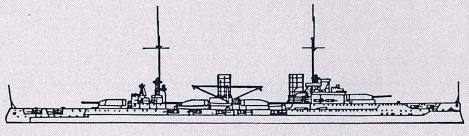
BB KONIG
Main guns: 10 x 12"/50 **Secondary mounts:** 14 x 5.9"/45
Tertiary mounts: 6 x 3.5"/45 **Max. speed:** 21 **Flotation:** 57 **Belt armor:** 14
Deck armor: 5 **Primary turret armor:** 14 **Secondary turret armor:** 7
Ship selection points: 126 **Earliest year of availability:** 1914

GERMAN BATTLESHIP — WORLD WAR I



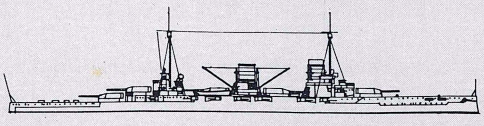
BB BAYERN
Main guns: 8 x 15"/45 **Secondary mounts:** 16 x 5.9"/45
Tertiary mounts: 8 x 3.5"/45 **Max. speed:** 21 **Flotation:** 65 **Belt armor:** 14
Deck armor: 5 **Primary turret armor:** 14 **Secondary turret armor:** 7
Ship selection points: 152 **Earliest year of availability:** 1916

GERMAN BATTLECRUISER — WORLD WAR I



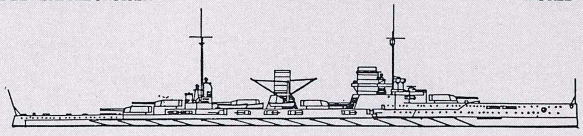
BC VON DER TANN
Main guns: 8 x 11"/45 **Secondary mounts:** 10 x 5.9"/45
Tertiary mounts: 12 x 3.5"/45 **Max. speed:** 27 **Flotation:** 43 **Belt armor:** 10
Deck armor: 3 **Primary turret armor:** 9 **Secondary turret armor:** 6
Ship selection points: 91 **Earliest year of availability:** 1914

GERMAN BATTLECRUISER — WORLD WAR I



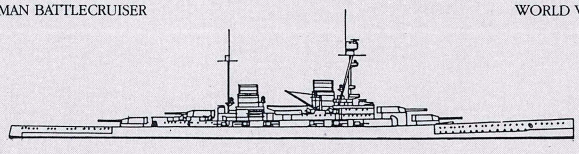
BC MOLTKE
Main guns: 10 x 11"/50 **Secondary mounts:** 12 x 5.9"/45
Tertiary mounts: 8 x 3.5"/45 **Max. speed:** 27 **Flotation:** 51 **Belt armor:** 11
Deck armor: 3 **Primary turret armor:** 10 **Secondary turret armor:** 6
Ship selection points: 105 **Earliest year of availability:** 1914

GERMAN BATTLECRUISER — WORLD WAR I



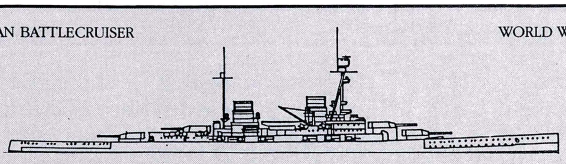
BC SEYDLITZ
Main guns: 10 x 11"/50 **Secondary mounts:** 12 x 5.9"/45
Tertiary mounts: 10 x 3.5"/45 **Max. speed:** 29 **Flotation:** 57 **Belt armor:** 12
Deck armor: 4 **Primary turret armor:** 10 **Secondary turret armor:** 6
Ship selection points: 113 **Earliest year of availability:** 1914

GERMAN BATTLECRUISER — WORLD WAR I



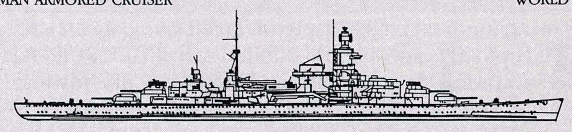
BC DERFFLINGER
Main guns: 8 x 12"/50 **Secondary mounts:** 12 x 5.9"/45
Tertiary mounts: 8 x 3.5"/45 **Max. speed:** 27 **Flotation:** 62 **Belt armor:** 12
Deck armor: 4 **Primary turret armor:** 11 **Secondary turret armor:** 6
Ship selection points: 117 **Earliest year of availability:** 1914

GERMAN BATTLECRUISER — WORLD WAR I



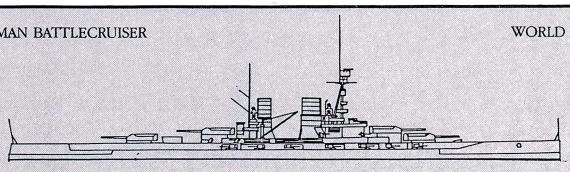
BC LUETZOW
Main guns: 8 x 12"/50 **Secondary mounts:** 14 x 5.9"/45
Tertiary mounts: 8 x 3.5"/45 **Max. speed:** 27 **Flotation:** 63 **Belt armor:** 12
Deck armor: 4 **Primary turret armor:** 11 **Secondary turret armor:** 6
Ship selection points: 118 **Earliest year of availability:** 1915

GERMAN ARMORED CRUISER — WORLD WAR I



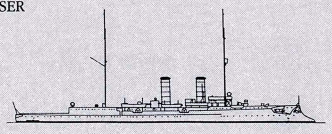
AC BLUCHER
Main guns: 12 x 8.2"/45 **Secondary mounts:** 8 x 5.9"/45
Tertiary mounts: 16 x 3.5"/45 **Max. speed:** 24 **Flotation:** 35 **Belt armor:** 8
Deck armor: 3 **Primary turret armor:** 8 **Secondary turret armor:** 6
Ship selection points: 77 **Earliest year of availability:** 1914

GERMAN BATTLECRUISER — WORLD WAR I



BC MACKENSEN
Main guns: 8 x 14"/50 **Secondary mounts:** 14 x 5.9"/45
Tertiary mounts: 8 x 3.5"/45 **Max. speed:** 27 **Flotation:** 71 **Belt armor:** 13
Deck armor: 4 **Primary turret armor:** 12 **Secondary turret armor:** 6
Ship selection points: 143 **Earliest year of availability:** 1918

GERMAN LIGHT CRUISER — WORLD WAR I



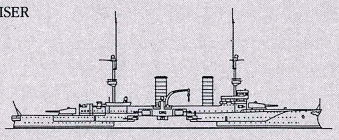
CL NYMPHE
Main guns: 10 x 4.1"/45 **Secondary mounts:** 2 x 18" TT
Max. speed: 21 **Flotation:** 6 **Belt armor:** 1
Deck armor: 2 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 12 **Earliest year of availability:** 1914

GERMAN BATTLECRUISER — WORLD WAR I

(Historical reference not available)

BC ERSATZ YORCK
Main guns: 8 x 15"/45 **Secondary mounts:** 12 x 5.9"/45
Tertiary mounts: 8 x 3.5"/45 **Max. speed:** 27 **Flotation:** 76 **Belt armor:** 13
Deck armor: 5 **Primary turret armor:** 13 **Secondary turret armor:** 6
Ship selection points: 157 **Earliest year of availability:** 1918

GERMAN LIGHT CRUISER — WORLD WAR I



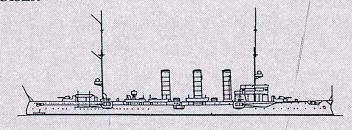
CL BREMEN
Main guns: 10 x 4.1"/45 **Secondary mounts:** 2 x 18" TT
Max. speed: 23 **Flotation:** 8 **Belt armor:** 1
Deck armor: 2 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 13 **Earliest year of availability:** 1914

GERMAN ARMORED CRUISER — WORLD WAR I

(Historical reference not available)

AC PRINZ ADALBERT
Main guns: 4 x 8.2"/40 **Secondary mounts:** 10 x 5.9"/45
Tertiary mounts: 12 x 3.5"/45 **Max. speed:** 20 **Flotation:** 20 **Belt armor:** 4
Deck armor: 3 **Primary turret armor:** 6 **Secondary turret armor:** 4
Ship selection points: 49 **Earliest year of availability:** 1914

GERMAN LIGHT CRUISER — WORLD WAR I



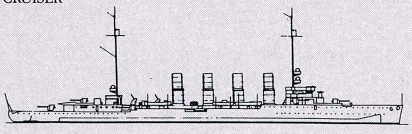
CL STETTIN
Main guns: 10 x 4.1"/45 **Secondary mounts:** 2 x 18" TT
Max. speed: 25 **Flotation:** 8 **Belt armor:** 1
Deck armor: 2 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 13 **Earliest year of availability:** 1914

GERMAN ARMORED CRUISER — WORLD WAR I

(Historical reference not available)

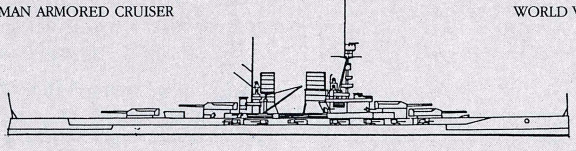
AC ROON
Main guns: 4 x 8.2"/40 **Secondary mounts:** 10 x 5.9"/45
Tertiary mounts: 14 x 3.5"/45 **Max. speed:** 21 **Flotation:** 21 **Belt armor:** 4
Deck armor: 3 **Primary turret armor:** 6 **Secondary turret armor:** 4
Ship selection points: 50 **Earliest year of availability:** 1914

GERMAN LIGHT CRUISER — WORLD WAR I



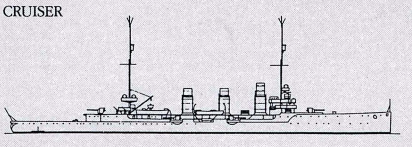
CL MAGDEBURG
Main guns: 7 x 5.9"/45 **Secondary mounts:** 2 x 3.5"/45
Tertiary mounts: 2 x 19.7" TT **Max. speed:** 27 **Flotation:** 11 **Belt armor:** 2
Deck armor: 2 **Primary turret armor:** 2 **Secondary turret armor:** 0
Ship selection points: 23 **Earliest year of availability:** 1914

GERMAN ARMORED CRUISER — WORLD WAR I



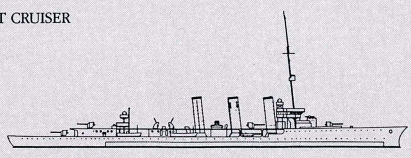
AC SCHARNHORST
Main guns: 8 x 8.2"/40 **Secondary mounts:** 6 x 5.9"/45
Tertiary mounts: 18 x 3.5"/45 **Max. speed:** 24 **Flotation:** 26 **Belt armor:** 6
Deck armor: 3 **Primary turret armor:** 7 **Secondary turret armor:** 6
Ship selection points: 60 **Earliest year of availability:** 1914

GERMAN LIGHT CRUISER — WORLD WAR I



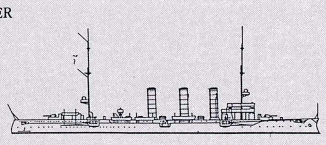
CL PILLAU
Main guns: 8 x 5.5"/50 **Secondary mounts:** 4 x 19.7" TT
Max. speed: 27 **Flotation:** 10 **Belt armor:** 1
Deck armor: 3 **Primary turret armor:** 2 **Secondary turret armor:** 0
Ship selection points: 22 **Earliest year of availability:** 1915

GERMAN LIGHT CRUISER WORLD WAR I



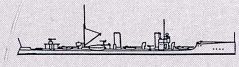
CL BRUMMER
Main guns: 4 x 5.9"/45 **Secondary mounts:** 2 x 3.5"/45
Tertiary mounts: 2 x 19.7" TT **Max. speed:** 28 **Flotation:** 12 **Belt armor:** 2
Deck armor: 1 **Primary turret armor:** 2 **Secondary turret armor:** 0
Ship selection points: 19 **Earliest year of availability:** 1916

GERMAN LIGHT CRUISER WORLD WAR I



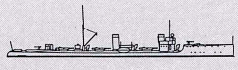
CL KONIGSBURG
Main guns: 8 x 5.9"/45 **Secondary mounts:** 4 x 19.7" TT
Max. speed: 27 **Flotation:** 14 **Belt armor:** 3
Deck armor: 2 **Primary turret armor:** 2 **Secondary turret armor:** 0
Ship selection points: 27 **Earliest year of availability:** 1916

GERMAN TORPEDO BOAT WORLD WAR I



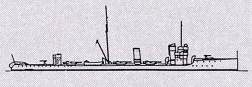
TB T-138
Main guns: 1 x 3.5"/45 **Secondary mounts:** 3 x 18" TT
Max. speed: 30 **Flotation:** 2 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 3 **Earliest year of availability:** 1914

GERMAN TORPEDO BOAT WORLD WAR I



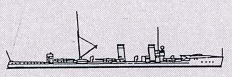
TB T-162
Main guns: 2 x 3.5"/45 **Secondary mounts:** 3 x 18" TT
Max. speed: 32 **Flotation:** 2 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 3 **Earliest year of availability:** 1914

GERMAN TORPEDO BOAT WORLD WAR I



TB T-176
Main guns: 2 x 3.5"/45 **Secondary mounts:** 4 x 19.7" TT
Max. speed: 33 **Flotation:** 2 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 4 **Earliest year of availability:** 1914

GERMAN DESTROYER WORLD WAR I



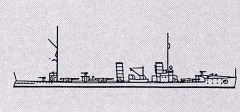
DD V-1
Main guns: 2 x 3.5"/45 **Secondary mounts:** 4 x 19.7" TT
Max. speed: 33 **Flotation:** 2 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 4 **Earliest year of availability:** 1914

GERMAN DESTROYER WORLD WAR I

(Historical reference not available)

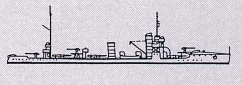
DD S-13
Main guns: 2 x 4.1"/45 **Secondary mounts:** 1 x 3.5"/45
Tertiary mounts: 4 x 19.7" TT **Max. speed:** 34 **Flotation:** 3 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 5 **Earliest year of availability:** 1914

GERMAN DESTROYER WORLD WAR I



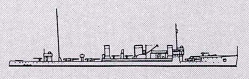
DD V-25
Main guns: 3 x 3.5"/45 **Secondary mounts:** 6 x 19.7" TT
Max. speed: 34 **Flotation:** 3 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 6 **Earliest year of availability:** 1914

GERMAN DESTROYER WORLD WAR I



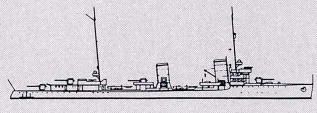
DD S-53
Main guns: 3 x 4.1"/45 **Secondary mounts:** 6 x 19.7" TT
Max. speed: 35 **Flotation:** 4 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 7 **Earliest year of availability:** 1915

GERMAN DESTROYER WORLD WAR I



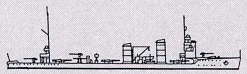
DD G-101
Main guns: 4 x 4.1"/45 **Secondary mounts:** 6 x 19.7" TT
Max. speed: 34 **Flotation:** 5 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 8 **Earliest year of availability:** 1915

GERMAN DESTROYER WORLD WAR I



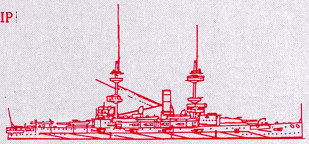
DD S-113
Main guns: 4 x 5.9"/45 **Secondary mounts:** 4 x 23.7" TT
Max. speed: 35 **Flotation:** 6 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 12 **Earliest year of availability:** 1918

GERMAN DESTROYER WORLD WAR I



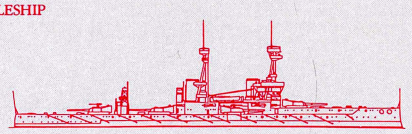
DD V-125
Main guns: 3 x 4.1"/45 **Secondary mounts:** 6 x 19.7" TT
Max. speed: 35 **Flotation:** 5 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 8 **Earliest year of availability:** 1917

BRITISH OLD BATTLESHIP — WORLD WAR I



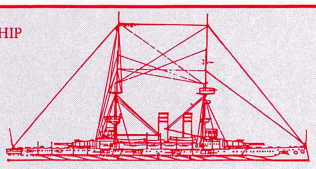
OBB MAJESTIC
Main guns: 4 x 12"/40 **Secondary mounts:** 12 x 6"/45
Max. speed: 17 **Flotation:** 32 **Belt armor:** 6
Deck armor: 3 **Primary turret armor:** 7 **Secondary turret armor:** 4
Ship selection points: 61 **Earliest year of availability:** 1914

BRITISH BATTLESHIP — WORLD WAR I



BB BELLEROPHON
Main guns: 10 x 12"/45 **Secondary mounts:** 16 x 4.7"/45
Max. speed: 21 **Flotation:** 44 **Belt armor:** 10
Deck armor: 4 **Primary turret armor:** 11 **Secondary turret armor:** 0
Ship selection points: 101 **Earliest year of availability:** 1914

BRITISH OLD BATTLESHIP — WORLD WAR I



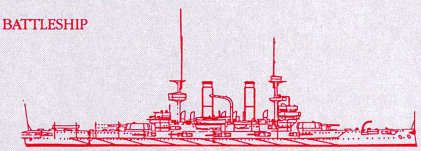
OBB FORMIDABLE
Main guns: 4 x 12"/40 **Secondary mounts:** 12 x 6"/45
Max. speed: 18 **Flotation:** 31 **Belt armor:** 9
Deck armor: 3 **Primary turret armor:** 10 **Secondary turret armor:** 6
Ship selection points: 69 **Earliest year of availability:** 1914

BRITISH BATTLESHIP — WORLD WAR I

(Historical reference not available)

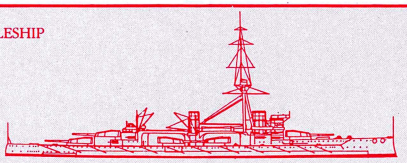
BB ST. VINCENT
Main guns: 10 x 12"/50 **Secondary mounts:** 20 x 4"/50
Max. speed: 21 **Flotation:** 46 **Belt armor:** 10
Deck armor: 3 **Primary turret armor:** 11 **Secondary turret armor:** 0
Ship selection points: 100 **Earliest year of availability:** 1914

BRITISH OLD BATTLESHIP — WORLD WAR I



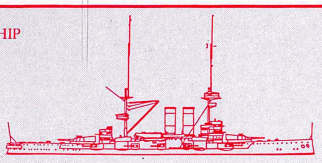
OBB SWIFTSURE
Main guns: 4 x 10"/45 **Secondary mounts:** 14 x 7.5"/50
Max. speed: 19 **Flotation:** 28 **Belt armor:** 7
Deck armor: 3 **Primary turret armor:** 10 **Secondary turret armor:** 7
Ship selection points: 65 **Earliest year of availability:** 1914

BRITISH BATTLESHIP — WORLD WAR I



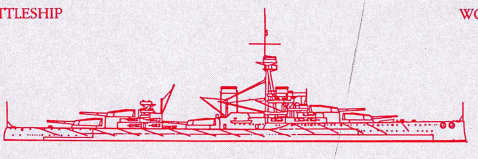
BB NEPTUNE
Main guns: 10 x 12"/50 **Secondary mounts:** 16 x 4"/50
Max. speed: 21 **Flotation:** 45 **Belt armor:** 10
Deck armor: 3 **Primary turret armor:** 11 **Secondary turret armor:** 0
Ship selection points: 99 **Earliest year of availability:** 1914

BRITISH OLD BATTLESHIP — WORLD WAR I



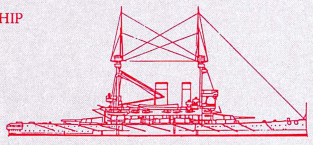
OBB KING EDWARD VII
Main guns: 4 x 12"/40 **Secondary mounts:** 4 x 9.2"/45
Tertiary mounts: 10 x 6"/50 **Max. speed:** 18 **Flotation:** 31 **Belt armor:** 9
Deck armor: 3 **Primary turret armor:** 12 **Secondary turret armor:** 7
Ship selection points: 75 **Earliest year of availability:** 1914

BRITISH BATTLESHIP — WORLD WAR I



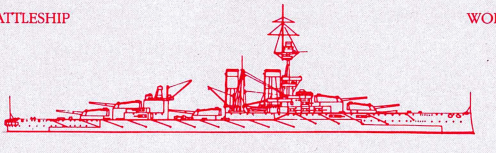
BB ORION
Main guns: 10 x 13.5"/45 **Secondary mounts:** 16 x 4"/50
Max. speed: 21 **Flotation:** 52 **Belt armor:** 12
Deck armor: 4 **Primary turret armor:** 11 **Secondary turret armor:** 0
Ship selection points: 124 **Earliest year of availability:** 1914

BRITISH OLD BATTLESHIP — WORLD WAR I



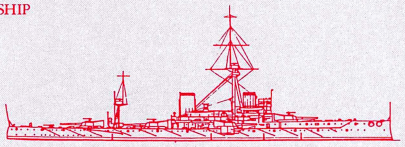
OBB LORD NELSON
Main guns: 4 x 12"/45 **Secondary mounts:** 10 x 9.2"/45
Max. speed: 18 **Flotation:** 35 **Belt armor:** 12
Deck armor: 4 **Primary turret armor:** 12 **Secondary turret armor:** 7
Ship selection points: 83 **Earliest year of availability:** 1914

BRITISH BATTLESHIP — WORLD WAR I



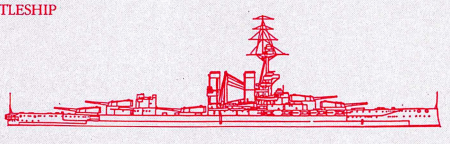
BB KING GEORGE V
Main guns: 10 x 13.5"/45 **Secondary mounts:** 16 x 4"/50
Max. speed: 21 **Flotation:** 51 **Belt armor:** 12
Deck armor: 4 **Primary turret armor:** 11 **Secondary turret armor:** 0
Ship selection points: 123 **Earliest year of availability:** 1914

BRITISH BATTLESHIP — WORLD WAR I



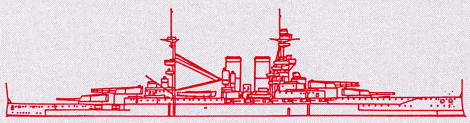
BB DREADNOUGHT
Main guns: 10 x 12"/45 **Max. speed:** 21 **Flotation:** 43 **Belt armor:** 11
Deck armor: 3 **Primary turret armor:** 11 **Secondary turret armor:** 0
Ship selection points: 96 **Earliest year of availability:** 1914

BRITISH BATTLESHIP — WORLD WAR I



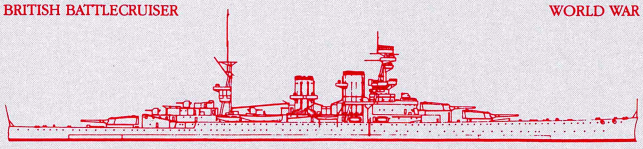
BB IRON DUKE
Main guns: 10 x 13.5"/45 **Secondary mounts:** 12 x 6"/45
Max. speed: 21 **Flotation:** 61 **Belt armor:** 12
Deck armor: 3 **Primary turret armor:** 11 **Secondary turret armor:** 6
Ship selection points: 132 **Earliest year of availability:** 1914

BRITISH BATTLESHIP — WORLD WAR I



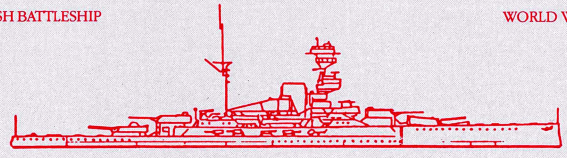
BB QUEEN ELIZABETH
Main guns: 8 x 15″/42 **Secondary mounts:** 16 x 6″/45
Max. speed: 24 **Flotation:** 66 **Belt armor:** 13
Deck armor: 3 **Primary turret armor:** 13 **Secondary turret armor:** 6
Ship selection points: 146 **Earliest year of availability:** 1915

BRITISH BATTLECRUISER — WORLD WAR I



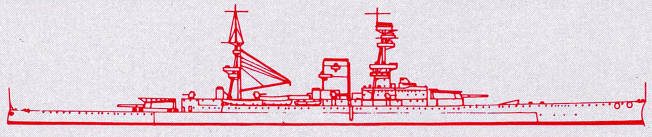
BC RENOWN
Main guns: 6 x 15″/42 **Secondary mounts:** 15 x 4″/50
Max. speed: 32 **Flotation:** 65 **Belt armor:** 6
Deck armor: 3 **Primary turret armor:** 11 **Secondary turret armor:** 0
Ship selection points: 117 **Earliest year of availability:** 1916

BRITISH BATTLESHIP — WORLD WAR I



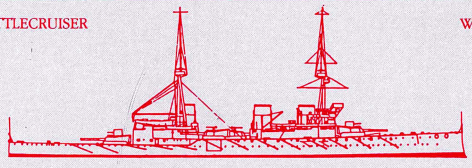
BB REVENGE
Main guns: 8 x 15″/42 **Secondary mounts:** 14 x 6″/45
Max. speed: 21 **Flotation:** 62 **Belt armor:** 13
Deck armor: 4 **Primary turret armor:** 13 **Secondary turret armor:** 6
Ship selection points: 143 **Earliest year of availability:** 1916

BRITISH BATTLECRUISER — WORLD WAR I



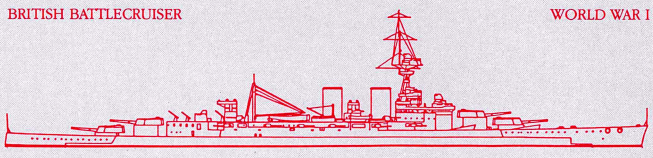
BC COURAGEOUS
Main guns: 4 x 15″/42 **Secondary mounts:** 18 x 4″/50
Max. speed: 32 **Flotation:** 45 **Belt armor:** 3
Deck armor: 2 **Primary turret armor:** 13 **Secondary turret armor:** 0
Ship selection points: 88 **Earliest year of availability:** 1916

BRITISH BATTLECRUISER — WORLD WAR I



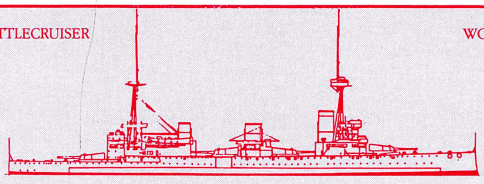
BC INVINCIBLE
Main guns: 8 x 12″/45 **Secondary mounts:** 16 x 4″/50
Max. speed: 25 **Flotation:** 40 **Belt armor:** 6
Deck armor: 2 **Primary turret armor:** 7 **Secondary turret armor:** 0
Ship selection points: 77 **Earliest year of availability:** 1914

BRITISH BATTLECRUISER — WORLD WAR I



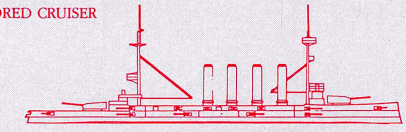
BC HOOD
Main guns: 8 x 15″/42 **Secondary mounts:** 12 x 5.5″/50
Tertiary mounts: 4 x 4″/50 **Max. speed:** 31 **Flotation:** 82 **Belt armor:** 12
Deck armor: 3 **Primary turret armor:** 15 **Secondary turret armor:** 0
Ship selection points: 161 **Earliest year of availability:** 1918

BRITISH BATTLECRUISER — WORLD WAR I



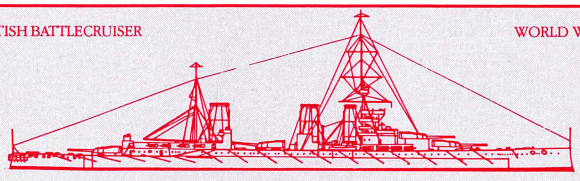
BC INDEFATIGABLE
Main guns: 8 x 12″/50 **Secondary mounts:** 16 x 4″/50
Max. speed: 25 **Flotation:** 44 **Belt armor:** 6
Deck armor: 2 **Primary turret armor:** 7 **Secondary turret armor:** 0
Ship selection points: 80 **Earliest year of availability:** 1914

BRITISH ARMORED CRUISER — WORLD WAR I



AC CRESSY
Main guns: 2 x 9.2″/40 **Secondary mounts:** 12 x 6″/45
Max. speed: 21 **Flotation:** 28 **Belt armor:** 6
Deck armor: 3 **Primary turret armor:** 6 **Secondary turret armor:** 5
Ship selection points: 51 **Earliest year of availability:** 1914

BRITISH BATTLECRUISER — WORLD WAR I



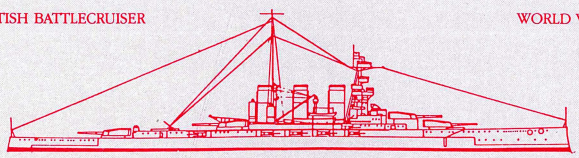
BC LION
Main guns: 8 x 13.5″/45 **Secondary mounts:** 16 x 4″/50
Max. speed: 27 **Flotation:** 59 **Belt armor:** 9
Deck armor: 2 **Primary turret armor:** 9 **Secondary turret armor:** 4
Ship selection points: 111 **Earliest year of availability:** 1914

BRITISH ARMORED CRUISER — WORLD WAR I

(Historical reference not available)

AC DRAKE
Main guns: 2 x 9.2″/40 **Secondary mounts:** 16 x 6″/45
Max. speed: 23 **Flotation:** 31 **Belt armor:** 6
Deck armor: 3 **Primary turret armor:** 5 **Secondary turret armor:** 6
Ship selection points: 56 **Earliest year of availability:** 1914

BRITISH BATTLECRUISER — WORLD WAR I



BC TIGER
Main guns: 8 x 13.5″/45 **Secondary mounts:** 12 x 6″/45
Max. speed: 29 **Flotation:** 70 **Belt armor:** 9
Deck armor: 3 **Primary turret armor:** 9 **Secondary turret armor:** 6
Ship selection points: 125 **Earliest year of availability:** 1914

BRITISH ARMORED CRUISER — WORLD WAR I

(Historical reference not available)

AC MONMOUTH
Main guns: 14 x 6″/45 **Max. speed:** 23 **Flotation:** 22 **Belt armor:** 4
Deck armor: 2 **Primary turret armor:** 5 **Secondary turret armor:** 5
Ship selection points: 42 **Earliest year of availability:** 1914

BRITISH ARMORED CRUISER — WORLD WAR I

(Historical reference not available)

AC DEVONSHIRE
Main guns: 14 x 7.5"/50 **Secondary mounts:** 6 x 6"/45
Max. speed: 22 **Flotation:** 24 **Belt armor:** 6
Deck armor: 2 **Primary turret armor:** 6 **Secondary turret armor:** 6
Ship selection points: 44 **Earliest year of availability:** 1914

BRITISH ARMORED CRUISER — WORLD WAR I

(Historical reference not available)

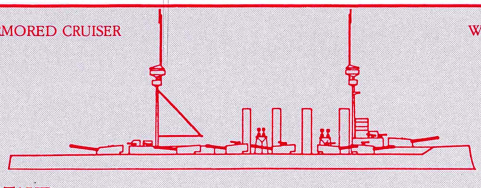
AC BLACK PRINCE
Main guns: 6 x 9.2"/45 **Secondary mounts:** 10 x 6"/50
Max. speed: 22 **Flotation:** 30 **Belt armor:** 6
Deck armor: 2 **Primary turret armor:** 8 **Secondary turret armor:** 6
Ship selection points: 58 **Earliest year of availability:** 1914

BRITISH ARMORED CRUISER — WORLD WAR I

(Historical reference not available)

AC WARRIOR
Main guns: 6 x 9.2"/45 **Secondary mounts:** 4 x 7.5"/50
Max. speed: 22 **Flotation:** 30 **Belt armor:** 6
Deck armor: 2 **Primary turret armor:** 8 **Secondary turret armor:** 8
Ship selection points: 54 **Earliest year of availability:** 1914

BRITISH ARMORED CRUISER — WORLD WAR I



AC MINOTAUR
Main guns: 4 x 9.2"/50 **Secondary mounts:** 10 x 7.5"/50
Max. speed: 23 **Flotation:** 34 **Belt armor:** 6
Deck armor: 2 **Primary turret armor:** 8 **Secondary turret armor:** 8
Ship selection points: 63 **Earliest year of availability:** 1914

BRITISH LIGHT CRUISER — WORLD WAR I

(Historical reference not available)

CL HIGHFLYER
Main guns: 11 x 6"/45 **Secondary mounts:** 2 x 18" TT
Max. speed: 20 **Flotation:** 13 **Belt armor:** 1
Deck armor: 3 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 25 **Earliest year of availability:** 1914

BRITISH LIGHT CRUISER — WORLD WAR I

(Historical reference not available)

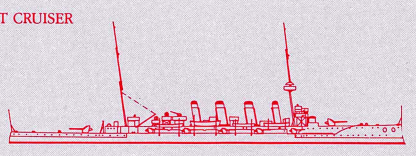
CL PATHFINDER
Main guns: 9 x 4"/50 **Secondary mounts:** 2 x 14" TT
Max. speed: 25 **Flotation:** 7 **Belt armor:** 2
Deck armor: 1 **Primary turret armor:** 1 **Secondary turret armor:** 1
Ship selection points: 13 **Earliest year of availability:** 1914

BRITISH LIGHT CRUISER — WORLD WAR I

(Historical reference not available)

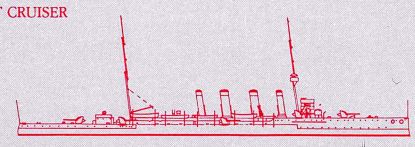
CL ACTIVE
Main guns: 10 x 4"/50 **Secondary mounts:** 2 x 21" TT
Max. speed: 26 **Flotation:** 8 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 10 **Earliest year of availability:** 1914

BRITISH LIGHT CRUISER — WORLD WAR I



CL BRISTOL
Main guns: 2 x 6"/50 **Secondary mounts:** 10 x 4"/50
Tertiary mounts: 2 x 18" TT **Max. speed:** 27 **Flotation:** 11 **Belt armor:** 0
Deck armor: 2 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 17 **Earliest year of availability:** 1914

BRITISH LIGHT CRUISER — WORLD WAR I



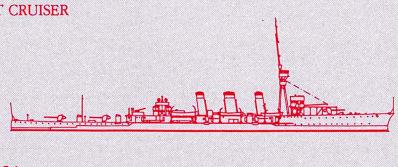
CL WEYMOUTH
Main guns: 8 x 6"/50 **Secondary mounts:** 2 x 21" TT
Max. speed: 27 **Flotation:** 12 **Belt armor:** 0
Deck armor: 2 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 21 **Earliest year of availability:** 1914

BRITISH LIGHT CRUISER — WORLD WAR I

(Historical reference not available)

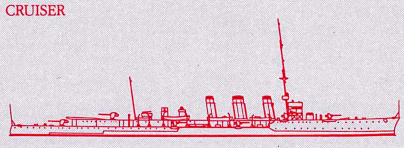
CL NOTTINGHAM
Main guns: 9 x 6"/50 **Secondary mounts:** 2 x 21" TT
Max. speed: 27 **Flotation:** 11 **Belt armor:** 3
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 21 **Earliest year of availability:** 1914

BRITISH LIGHT CRUISER — WORLD WAR I



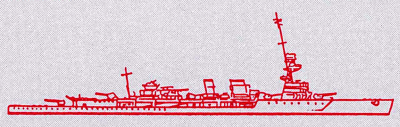
CL ARETHUSA
Main guns: 3 x 6"/50 **Secondary mounts:** 4 x 4"/50
Tertiary mounts: 8 x 21" TT **Max. speed:** 30 **Flotation:** 8 **Belt armor:** 3
Deck armor: 1 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 17 **Earliest year of availability:** 1914

BRITISH LIGHT CRUISER — WORLD WAR I



CL CAROLINE
Main guns: 4 x 6"/50 **Secondary mounts:** 8 x 21" TT
Max. speed: 29 **Flotation:** 8 **Belt armor:** 3
Deck armor: 1 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 16 **Earliest year of availability:** 1914

BRITISH LIGHT CRUISER — WORLD WAR I



CL CALEDON
Main guns: 5 x 6″/50 **Secondary mounts:** 8 x 21″ TT
Max. speed: 30 **Flotation:** 9 **Belt armor:** 3
Deck armor: 1 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 18 **Earliest year of availability:** 1917

BRITISH DESTROYER — WORLD WAR I

(Historical reference not available)

DD BOTHA
Main guns: 4 x 4″/50 **Secondary mounts:** 4 x 21″ TT
Max. speed: 32 **Flotation:** 4 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 7 **Earliest year of availability:** 1914

BRITISH DESTROYER — WORLD WAR I

DD ACORN
Main guns: 2 x 4″/50 **Secondary mounts:** 2 x 21″ TT
Max. speed: 28 **Flotation:** 2 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 3 **Earliest year of availability:** 1914

BRITISH DESTROYER — WORLD WAR I

DD SABRE
Main guns: 3 x 4″/50 **Secondary mounts:** 4 x 21″ TT
Max. speed: 36 **Flotation:** 3 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 5 **Earliest year of availability:** 1918

BRITISH DESTROYER — WORLD WAR I

DD ACASTA
Main guns: 3 x 4″/50 **Secondary mounts:** 2 x 21″ TT
Max. speed: 29 **Flotation:** 3 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 4 **Earliest year of availability:** 1914

BRITISH DESTROYER — WORLD WAR I

DD VAMPIRE
Main guns: 4 x 4″/50 **Secondary mounts:** 4 x 21″ TT
Max. speed: 34 **Flotation:** 3 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 6 **Earliest year of availability:** 1917

BRITISH DESTROYER — WORLD WAR I

DD LYSANDER
Main guns: 3 x 4″/50 **Secondary mounts:** 4 x 21″ TT
Max. speed: 30 **Flotation:** 3 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 5 **Earliest year of availability:** 1914

CARGO SHIP (TRANSPORT), ALL NAVIES — WORLD WAR I

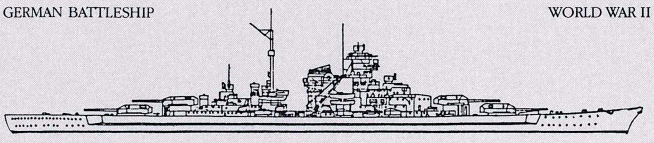
(Historical reference not available)

AK TRANSPORT
Main guns: 2 x 3.5″/45 **Max. speed:** 15 **Flotation:** 10 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 20 **Earliest year of availability:** 1914

WORLD WAR II

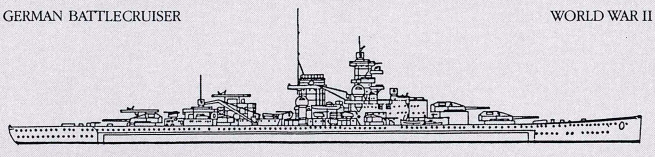
The second group of 79 ships (pages 17-23) are from World War II and represent the German, Italian, British, and French fleets.

GERMAN BATTLESHIP — WORLD WAR II



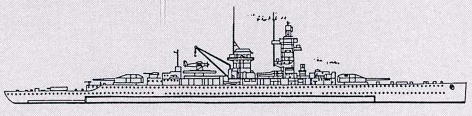
BB BISMARCK
Main guns: 8 x 15"/47 **Secondary mounts:** 12 x 5.9"/55 **Tertiary:** 16 x 4.1"/65
Maximum speed: 30 **Flotation:** 104 **Radar:** 1 **Belt armor:** 16
Deck armor: 10 **Primary turret armor:** 18 **Secondary turret armor:** 5
Ship selection points: 207 **Earliest year of availability:** 1941

GERMAN BATTLECRUISER — WORLD WAR II



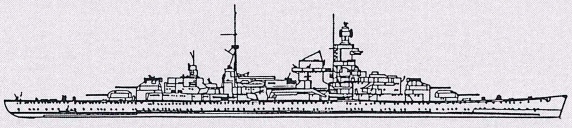
BC SCHARNHORST
Main guns: 9 x 11"/55 **Secondary mounts:** 12 x 5.9"/55 **Tertiary:** 14 x 4.1"/65
Maximum speed: 31 **Flotation:** 78 **Radar:** 0 **Belt armor:** 15
Deck armor: 8 **Primary turret armor:** 15 **Secondary turret armor:** 5
Ship selection points: 156 **Earliest year of availability:** 1939

GERMAN HEAVY CRUISER — WORLD WAR II



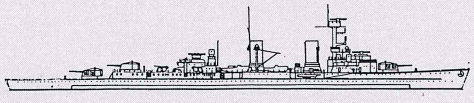
CA GRAF SPEE
Main guns: 6 x 11"/55 **Secondary mounts:** 8 x 5.9"/55 **Tertiary:** 6 x 4.1"/65
Maximum speed: 27 **Flotation:** 33 **Radar:** 0 **Belt armor:** 5
Deck armor: 4 **Primary turret armor:** 6 **Secondary turret armor:** 1
Ship selection points: 72 **Earliest year of availability:** 1939

GERMAN HEAVY CRUISER — WORLD WAR II



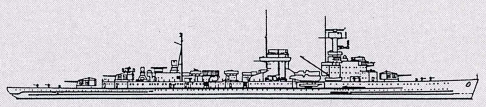
CA HIPPER
Main guns: 8 x 8"/60 **Secondary mounts:** 12 x 4.1"/65 **Tertiary:** 12 x G7A TT
Maximum speed: 32 **Flotation:** 37 **Radar:** 0 **Belt armor:** 5
Deck armor: 4 **Primary turret armor:** 6 **Secondary turret armor:** 0
Ship selection points: 64 **Earliest year of availability:** 1939

GERMAN LIGHT CRUISER — WORLD WAR II



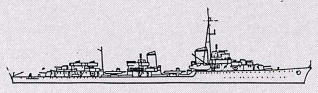
CL KONIGSBERG
Main guns: 9 x 5.9"/55 **Secondary mounts:** 6 x 3.5"/76 **Tertiary:** 12 x G7A TT
Maximum speed: 32 **Flotation:** 17 **Radar:** 0 **Belt armor:** 3
Deck armor: 2 **Primary turret armor:** 3 **Secondary turret armor:** 0
Ship selection points: 35 **Earliest year of availability:** 1939

GERMAN LIGHT CRUISER — WORLD WAR II



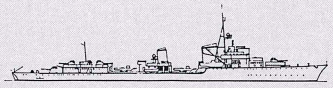
CL NURNBURG
Main guns: 9 x 5.9"/55 **Secondary mounts:** 8 x 3.5"/76 **Tertiary:** 12 x G7A TT
Maximum speed: 32 **Flotation:** 18 **Radar:** 0 **Belt armor:** 4
Deck armor: 1 **Primary turret armor:** 2 **Secondary turret armor:** 0
Ship selection points: 36 **Earliest year of availability:** 1939

GERMAN DESTROYER — WORLD WAR II



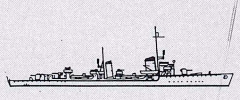
DD MAASS
Main guns: 5 x 5"/45 **Secondary mounts:** 8 x G7A TT
Maximum speed: 37 **Flotation:** 7 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 12 **Earliest year of availability:** 1939

GERMAN DESTROYER — WORLD WAR II



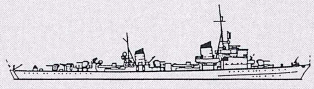
DD Z-23
Main guns: 5 x 5.9"/55 **Secondary mounts:** 8 x G7A TT
Maximum speed: 37 **Flotation:** 7 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 14 **Earliest year of availability:** 1940

GERMAN DESTROYER ESCORT — WORLD WAR II



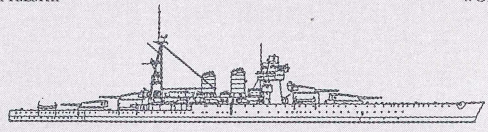
DE WOLF
Main guns: 3 x 4.1"/65 **Secondary mounts:** 6 x G7A TT
Maximum speed: 32 **Flotation:** 3 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 6 **Earliest year of availability:** 1939

GERMAN DESTROYER ESCORT — WORLD WAR II



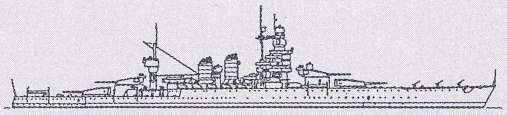
DE T-22
Main guns: 4 x 4.1"/65 **Secondary mounts:** 6 x G7A TT
Maximum speed: 32 **Flotation:** 4 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 8 **Earliest year of availability:** 1941

ITALIAN BATTLESHIP — WORLD WAR II



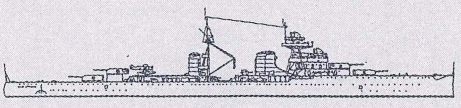
BB CAVOUR
Main guns: 10 x 12.6"/44 **Secondary mounts:** 12 x 4.7"/50 **Tertiary:** 8 x 3.9"/60
Maximum speed: 27 **Flotation:** 58 **Radar:** 0 **Belt armor:** 10
Deck armor: 6 **Primary turret armor:** 11 **Secondary turret armor:** 5
Ship selection points: 122 **Earliest year of availability:** 1940

ITALIAN BATTLESHIP WORLD WAR II



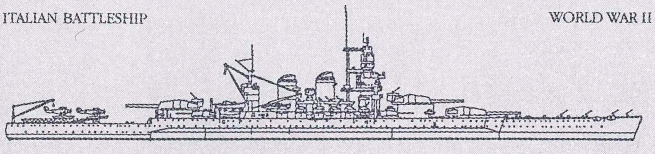
BB DORIA
Main guns: 10 x 12.6"/44 **Secondary mounts:** 12 x 5.3"/45 **Tertiary:** 10 x 3.5"/76
Maximum speed: 27 **Flotation:** 59 **Radar:** 0 **Belt armor:** 10
Deck armor: 6 **Primary turret armor:** 11 **Secondary turret armor:** 5
Ship selection points: 123 **Earliest year of availability:** 1940

ITALIAN LIGHT CRUISER WORLD WAR II



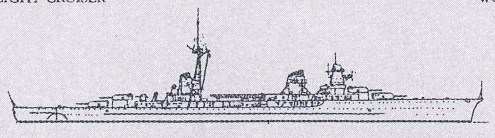
CL CADORNA
Main guns: 8 x 6"/50 **Secondary mounts:** 6 x 3.9"/60 **Tertiary:** 4 x SI-270 TT
Maximum speed: 37 **Flotation:** 16 **Radar:** 0 **Belt armor:** 1
Deck armor: 1 **Primary turret armor:** 1 **Secondary turret armor:** 0
Ship selection points: 26 **Earliest year of availability:** 1940

ITALIAN BATTLESHIP WORLD WAR II



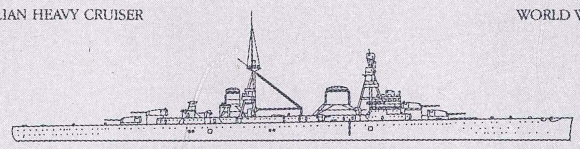
BB LITTORIO
Main guns: 9 x 15"/45 **Secondary mounts:** 12 x 6"/50 **Tertiary:** 12 x 3.5"/76
Maximum speed: 30 **Flotation:** 92 **Radar:** 0 **Belt armor:** 14
Deck armor: 8 **Primary turret armor:** 14 **Secondary turret armor:** 6
Ship selection points: 184 **Earliest year of availability:** 1940

ITALIAN LIGHT CRUISER WORLD WAR II



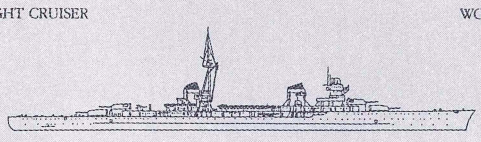
CL MONTECUCCOLI
Main guns: 8 x 6"/50 **Secondary mounts:** 6 x 3.9"/60 **Tertiary:** 4 x SI-270 TT
Maximum speed: 37 **Flotation:** 19 **Radar:** 0 **Belt armor:** 4
Deck armor: 1 **Primary turret armor:** 3 **Secondary turret armor:** 0
Ship selection points: 34 **Earliest year of availability:** 1940

ITALIAN HEAVY CRUISER WORLD WAR II



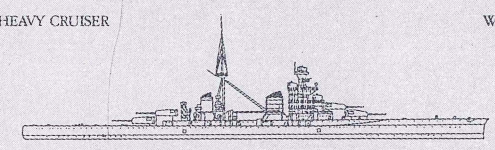
CA TRENTO
Main guns: 8 x 8"/50 **Secondary mounts:** 12 x 3.9"/60 **Tertiary:** 8 x SI-270 TT
Maximum speed: 35 **Flotation:** 27 **Radar:** 0 **Belt armor:** 3
Deck armor: 2 **Primary turret armor:** 4 **Secondary turret armor:** 0
Ship selection points: 48 **Earliest year of availability:** 1940

ITALIAN LIGHT CRUISER WORLD WAR II



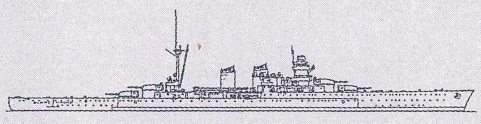
CL D'AOSTA
Main guns: 8 x 6"/50 **Secondary mounts:** 6 x 3.9"/60 **Tertiary:** 6 x SI-270 TT
Maximum speed: 37 **Flotation:** 22 **Radar:** 0 **Belt armor:** 3
Deck armor: 2 **Primary turret armor:** 4 **Secondary turret armor:** 0
Ship selection points: 37 **Earliest year of availability:** 1940

ITALIAN HEAVY CRUISER WORLD WAR II



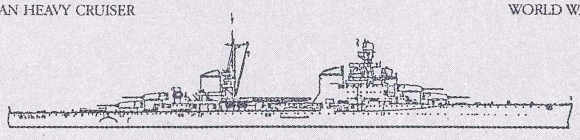
CA ZARA
Main guns: 8 x 8"/50 **Secondary mounts:** 12 x 3.9"/60
Maximum speed: 35 **Flotation:** 29 **Radar:** 0 **Belt armor:** 6
Deck armor: 3 **Primary turret armor:** 6 **Secondary turret armor:** 0
Ship selection points: 53 **Earliest year of availability:** 1940

ITALIAN LIGHT CRUISER WORLD WAR II



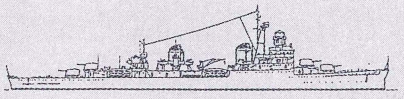
CL GARIBALDI
Main guns: 10 x 6"/50 **Secondary mounts:** 8 x 3.9"/60 **Tertiary:** 6 x SI-270 TT
Maximum speed: 35 **Flotation:** 24 **Radar:** 0 **Belt armor:** 5
Deck armor: 2 **Primary turret armor:** 5 **Secondary turret armor:** 0
Ship selection points: 45 **Earliest year of availability:** 1940

ITALIAN HEAVY CRUISER WORLD WAR II



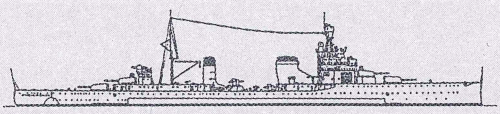
CA BOLZANO
Main guns: 8 x 8"/50 **Secondary mounts:** 16 x 3.9"/60 **Tertiary:** 8 x SI-270 TT
Maximum speed: 37 **Flotation:** 28 **Radar:** 0 **Belt armor:** 3
Deck armor: 2 **Primary turret armor:** 4 **Secondary turret armor:** 0
Ship selection points: 50 **Earliest year of availability:** 1940

ITALIAN LIGHT CRUISER WORLD WAR II



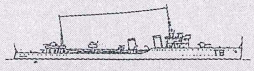
CL REGOLO
Main guns: 8 x 5.3"/45 **Secondary mounts:** 8 x SI-270 TT
Maximum speed: 42 **Flotation:** 11 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 15 **Earliest year of availability:** 1942

ITALIAN LIGHT CRUISER WORLD WAR II



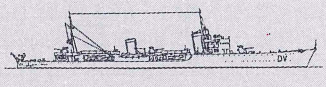
CL BARBIANO
Main guns: 8 x 6"/50 **Secondary mounts:** 6 x 3.9"/60 **Tertiary:** 4 x SI-270 TT
Maximum speed: 42 **Flotation:** 14 **Radar:** 0 **Belt armor:** 1
Deck armor: 1 **Primary turret armor:** 1 **Secondary turret armor:** 0
Ship selection points: 25 **Earliest year of availability:** 1940

ITALIAN DESTROYER WORLD WAR II



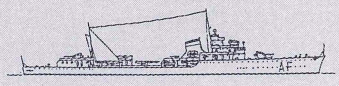
DD TURBINE
Main guns: 4 x 4.7"/50 **Secondary mounts:** 6 x SI-270 TT
Maximum speed: 35 **Flotation:** 4 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 8 **Earliest year of availability:** 1940

ITALIAN DESTROYER — WORLD WAR II



DD ZENO
Main guns: 6 x 4.7"/50 **Secondary mounts:** 6 x SI-270 TT
Maximum speed: 37 **Flotation:** 6 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 11 **Earliest year of availability:** 1940

ITALIAN DESTROYER — WORLD WAR II

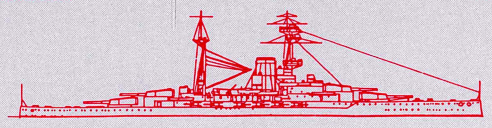


DD MAESTRALE
Main guns: 4 x 4.7"/50 **Secondary mounts:** 6 x SI-270 TT
Maximum speed: 37 **Flotation:** 5 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 9 **Earliest year of availability:** 1940

ITALIAN DESTROYER ESCORT — WORLD WAR II

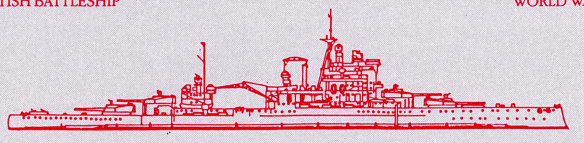
DE SPICA
Main guns: 3 x 3.9"/60 **Secondary mounts:** 4 x W-200 TT
Maximum speed: 32 **Flotation:** 3 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 5 **Earliest year of availability:** 1940

BRITISH BATTLESHIP — WORLD WAR II



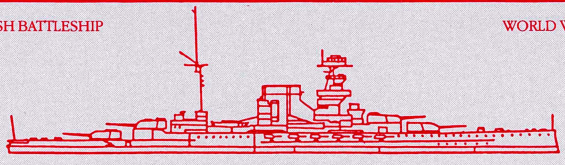
BB REVENGE
Main guns: 8 x 15"/42 **Secondary mounts:** 12 x 6"/45 **Tertiary:** 8 x 4"/40
Maximum speed: 21 **Flotation:** 67 **Radar:** 0 **Belt armor:** 13
Deck armor: 4 **Primary turret armor:** 11 **Secondary turret armor:** 6
Ship selection points: 144 **Earliest year of availability:** 1939

BRITISH BATTLESHIP — WORLD WAR II



BB BARHAM
Main guns: 8 x 15"/42 **Secondary mounts:** 12 x 6"/45 **Tertiary:** 8 x 4"/40
Maximum speed: 25 **Flotation:** 70 **Radar:** 0 **Belt armor:** 13
Deck armor: 3 **Primary turret armor:** 13 **Secondary turret armor:** 6
Ship selection points: 149 **Earliest year of availability:** 1939

BRITISH BATTLESHIP — WORLD WAR II

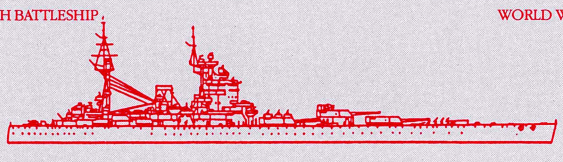


BB WARSPITE
Main guns: 8 x 15"/42 **Secondary mounts:** 8 x 6"/45 **Tertiary:** 8 x 4"/40
Maximum speed: 24 **Flotation:** 71 **Radar:** 0 **Belt armor:** 13
Deck armor: 4 **Primary turret armor:** 11 **Secondary turret armor:** 6
Ship selection points: 146 **Earliest year of availability:** 1939

BRITISH BATTLESHIP — WORLD WAR II

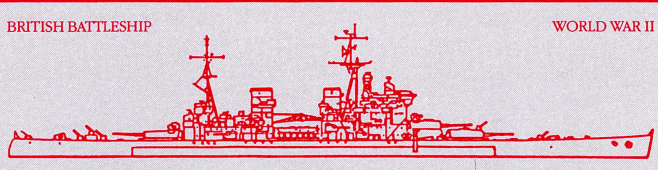
BB Q. ELIZABETH
Main guns: 8 x 15"/42 **Secondary mounts:** 20 x 4.5"/50
Maximum speed: 25 **Flotation:** 72 **Radar:** 0 **Belt armor:** 13
Deck armor: 4 **Primary turret armor:** 13 **Secondary turret armor:** 1
Ship selection points: 149 **Earliest year of availability:** 1940

BRITISH BATTLESHIP — WORLD WAR II



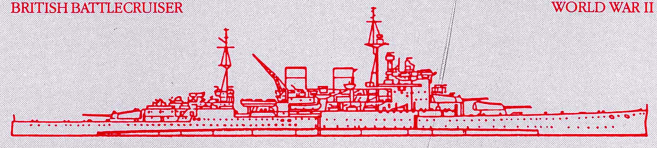
BB NELSON
Main guns: 9 x 16"/45 **Secondary mounts:** 12 x 6"/50 **Tertiary:** 6 x 4.7"/50
Maximum speed: 23 **Flotation:** 76 **Radar:** 0 **Belt armor:** 14
Deck armor: 6 **Primary turret armor:** 15 **Secondary turret armor:** 2
Ship selection points: 186 **Earliest year of availability:** 1939

BRITISH BATTLESHIP — WORLD WAR II



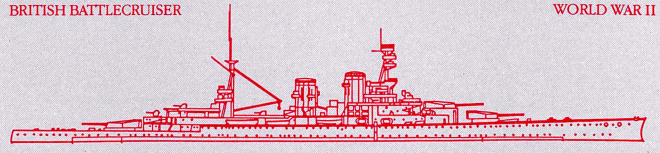
BB KING GEORGE V
Main guns: 10 x 14"/50 **Secondary mounts:** 16 x 5.25"/50
Maximum speed: 28 **Flotation:** 89 **Radar:** 0 **Belt armor:** 15
Deck armor: 6 **Primary turret armor:** 13 **Secondary turret armor:** 2
Ship selection points: 170 **Earliest year of availability:** 1941

BRITISH BATTLECRUISER — WORLD WAR II



BC REPULSE
Main guns: 6 x 15"/42 **Secondary mounts:** 15 x 4"/40 **Tertiary:** 8 x IX TT
Maximum speed: 29 **Flotation:** 75 **Radar:** 0 **Belt armor:** 9
Deck armor: 4 **Primary turret armor:** 11 **Secondary turret armor:** 1
Ship selection points: 132 **Earliest year of availability:** 1939

BRITISH BATTLECRUISER — WORLD WAR II

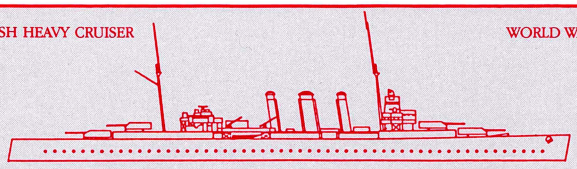


BC RENOWN
Main guns: 6 x 15"/42 **Secondary mounts:** 20 x 4.5"/50 **Tertiary:** 8 x IX TT
Maximum speed: 30 **Flotation:** 75 **Radar:** 0 **Belt armor:** 9
Deck armor: 5 **Primary turret armor:** 11 **Secondary turret armor:** 2
Ship selection points: 135 **Earliest year of availability:** 1939

BRITISH BATTLECRUISER — WORLD WAR II

BC HOOD
Main guns: 8 x 15"/42 **Secondary mounts:** 12 x 5.5"/50 **Tertiary:** 8 x 4"/40
Maximum speed: 30 **Flotation:** 90 **Radar:** 0 **Belt armor:** 12
Deck armor: 3 **Primary turret armor:** 15 **Secondary turret armor:** 0
Ship selection points: 165 **Earliest year of availability:** 1939

BRITISH HEAVY CRUISER WORLD WAR II



CA KENT
Main guns: 8 x 8"/50 **Secondary mounts:** 8 x 4"/40 **Tertiary:** 8 x MK-IX TT
Maximum speed: 32 **Flotation:** 29 **Radar:** 0 **Belt armor:** 4
Deck armor: 2 **Primary turret armor:** 2 **Secondary turret armor:** 0
Ship selection points: 47 **Earliest year of availability:** 1939

BRITISH LIGHT CRUISER WORLD WAR II

CL ENTERPRISE
Main guns: 7 x 6"/50 **Secondary mounts:** 4 x 4"/40 **Tertiary:** 16 x MK-IX TT
Maximum speed: 32 **Flotation:** 19 **Radar:** 0 **Belt armor:** 3
Deck armor: 1 **Primary turret armor:** 1 **Secondary turret armor:** 0
Ship selection points: 32 **Earliest year of availability:** 1939

BRITISH HEAVY CRUISER WORLD WAR II

CA DORSETSHIRE
Main guns: 8 x 8"/50 **Secondary mounts:** 8 x 4"/40 **Tertiary:** 8 x MK-IX TT
Maximum speed: 32 **Flotation:** 27 **Radar:** 0 **Belt armor:** 1
Deck armor: 4 **Primary turret armor:** 2 **Secondary turret armor:** 0
Ship selection points: 44 **Earliest year of availability:** 1939

BRITISH LIGHT CRUISER WORLD WAR II

CL AJAX
Main guns: 8 x 6"/50 **Secondary mounts:** 8 x 4"/40 **Tertiary:** 8 x MK-IX TT
Maximum speed: 32 **Flotation:** 19 **Radar:** 0 **Belt armor:** 4
Deck armor: 2 **Primary turret armor:** 1 **Secondary turret armor:** 0
Ship selection points: 34 **Earliest year of availability:** 1939

BRITISH HEAVY CRUISER WORLD WAR II

CA EXETER
Main guns: 6 x 8"/50 **Secondary mounts:** 4 x 4"/40 **Tertiary:** 6 x MK-IX TT
Maximum speed: 32 **Flotation:** 21 **Radar:** 0 **Belt armor:** 3
Deck armor: 2 **Primary turret armor:** 2 **Secondary turret armor:** 0
Ship selection points: 35 **Earliest year of availability:** 1939

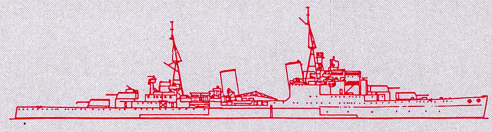
BRITISH LIGHT CRUISER WORLD WAR II

CL ARETHUSA
Main guns: 6 x 6"/50 **Secondary mounts:** 8 x 4"/40 **Tertiary:** 6 x MK-IX TT
Maximum speed: 32 **Flotation:** 14 **Radar:** 0 **Belt armor:** 3
Deck armor: 2 **Primary turret armor:** 1 **Secondary turret armor:** 0
Ship selection points: 27 **Earliest year of availability:** 1939

BRITISH LIGHT CRUISER WORLD WAR II

CL CALEDON
Main guns: 5 x 6"/50 **Secondary mounts:** 8 x MK-IX TT
Maximum speed: 30 **Flotation:** 11 **Radar:** 0 **Belt armor:** 3
Deck armor: 1 **Primary turret armor:** 1 **Secondary turret armor:** 0
Ship selection points: 20 **Earliest year of availability:** 1939

BRITISH LIGHT CRUISER WORLD WAR II



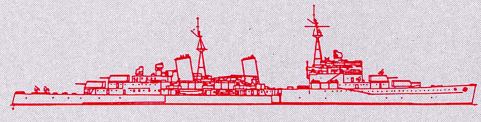
CL SOUTHAMPTON
Main guns: 12 x 6"/50 **Secondary mounts:** 8 x 4"/40 **Tertiary:** 6 x MK-IX TT
Maximum speed: 32 **Flotation:** 25 **Radar:** 0 **Belt armor:** 4
Deck armor: 3 **Primary turret armor:** 2 **Secondary turret armor:** 0
Ship selection points: 44 **Earliest year of availability:** 1939

BRITISH ANTI-AIRCRAFT CRUISER WORLD WAR II

(Historical reference not available)

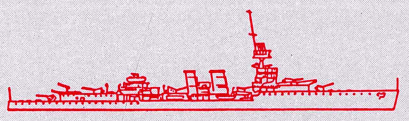
CLAA CAPETOWN
Main guns: 8 x 4"/40 **Maximum speed:** 30
Flotation: 11 **Radar:** 0 **Belt armor:** 3
Deck armor: 1 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 16 **Earliest year of availability:** 1939

BRITISH LIGHT CRUISER WORLD WAR II



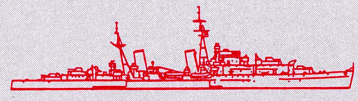
CL EDINBURGH
Main guns: 12 x 6"/50 **Secondary mounts:** 12 x 4"/40 **Tertiary:** 6 x MK-IX TT
Maximum speed: 32 **Flotation:** 30 **Radar:** 0 **Belt armor:** 4
Deck armor: 3 **Primary turret armor:** 2 **Secondary turret armor:** 0
Ship selection points: 50 **Earliest year of availability:** 1939

BRITISH LIGHT CRUISER WORLD WAR II



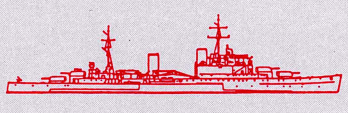
CL DANAE
Main guns: 6 x 6"/50 **Secondary mounts:** 12 x MK-IX TT
Maximum speed: 30 **Flotation:** 12 **Radar:** 0 **Belt armor:** 3
Deck armor: 1 **Primary turret armor:** 1 **Secondary turret armor:** 0
Ship selection points: 23 **Earliest year of availability:** 1939

BRITISH ANTI-AIRCRAFT CRUISER WORLD WAR II



CLAA DIDO
Main guns: 10 x 5.25"/50 **Secondary mounts:** 6 x MK-IX TT
Maximum speed: 33 **Flotation:** 14 **Radar:** 0 **Belt armor:** 3
Deck armor: 2 **Primary turret armor:** 2 **Secondary turret armor:** 0
Ship selection points: 24 **Earliest year of availability:** 1940

BRITISH LIGHT CRUISER — WORLD WAR II



CL FIJI
Main guns: 12 x 6″/50 **Secondary mounts:** 8 x 4″/40 **Tertiary:** 6 x MK-IX TT
Maximum speed: 32 **Flotation:** 23 **Radar:** 1 **Belt armor:** 3
Deck armor: 2 **Primary turret armor:** 2 **Secondary turret armor:** 0
Ship selection points: 42 **Earliest year of availability:** 1940

BRITISH ANTI-AIRCRAFT CRUISER — WORLD WAR II

CLAA ROYALIST
Main guns: 8 x 5.25″/50 **Maximum speed:** 33
Flotation: 15 **Radar:** 1 **Belt armor:** 3
Deck armor: 2 **Primary turret armor:** 2 **Secondary turret armor:** 0
Ship selection points: 23 **Earliest year of availability:** 1943

BRITISH DESTROYER — WORLD WAR II

DD VAMPIRE
Main guns: 4 x 4.7″/50 **Secondary mounts:** 6 x MK-IX TT
Maximum speed: 34 **Flotation:** 4 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 7 **Earliest year of availability:** 1939

BRITISH DESTROYER — WORLD WAR II

DD ACASTA
Main guns: 4 x 4.7″/50 **Secondary mounts:** 8 x MK-IX TT
Maximum speed: 35 **Flotation:** 4 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 8 **Earliest year of availability:** 1939

BRITISH DESTROYER — WORLD WAR II

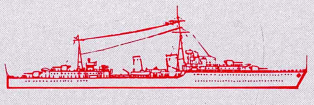
(Historical reference not available)

DD ELECTRA
Main guns: 4 x 4.7″/50 **Secondary mounts:** 8 x MK-IX TT
Maximum speed: 36 **Flotation:** 4 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 8 **Earliest year of availability:** 1939

BRITISH DESTROYER — WORLD WAR II

DD IMPERIAL
Main guns: 4 x 4.7″/50 **Secondary mounts:** 10 x MK-IX TT
Maximum speed: 36 **Flotation:** 4 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 9 **Earliest year of availability:** 1939

BRITISH DESTROYER — WORLD WAR II



DD TRIBAL
Main guns: 8 x 4.7″/50 **Secondary mounts:** 4 x MK-IX TT
Maximum speed: 35 **Flotation:** 6 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 11 **Earliest year of availability:** 1939

BRITISH DESTROYER — WORLD WAR II

DD JERVIS
Main guns: 6 x 4.7″/50 **Secondary mounts:** 10 x MK-IX TT
Maximum speed: 35 **Flotation:** 5 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 11 **Earliest year of availability:** 1939

BRITISH DESTROYER — WORLD WAR II

DD LIGHTNING
Main guns: 6 x 4.7″/50 **Secondary mounts:** 10 x MK-IX TT
Maximum speed: 35 **Flotation:** 5 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 11 **Earliest year of availability:** 1940

BRITISH DESTROYER — WORLD WAR II

DD ONSLOW
Main guns: 4 x 4.7″/50 **Secondary mounts:** 8 x MK-IX TT
Maximum speed: 35 **Flotation:** 4 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 8 **Earliest year of availability:** 1941

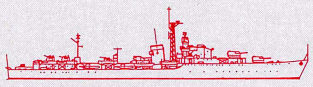
BRITISH DESTROYER — WORLD WAR II

DD SAVAGE
Main guns: 4 x 4.7″/50 **Secondary mounts:** 8 x MK-IX TT
Maximum speed: 35 **Flotation:** 5 **Radar:** 1 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 9 **Earliest year of availability:** 1943

BRITISH DESTROYER — WORLD WAR II

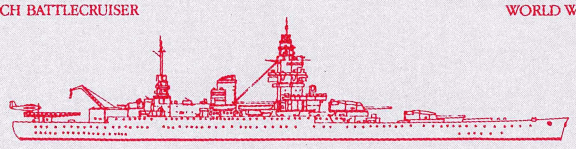
DD ZEBRA
Main guns: 4 x 4.5″/50 **Secondary mounts:** 8 x MK-IX TT
Maximum speed: 36 **Flotation:** 5 **Radar:** 2 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 9 **Earliest year of availability:** 1944

BRITISH DESTROYER — WORLD WAR II



DD BATTLE
Main guns: 4 x 4.5"/50 **Secondary mounts:** 8 x MK-IX TT
Maximum speed: 35 **Flotation:** 6 **Radar:** 2 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 10 **Earliest year of availability:** 1944

FRENCH BATTLECRUISER — WORLD WAR II

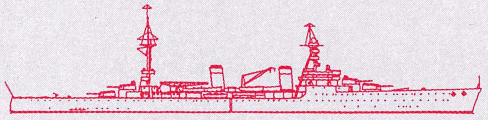


BC DUNKERQUE
Main guns: 8 x 13"/52 **Secondary mounts:** 16 x 5.1"/40
Maximum speed: 30 **Flotation:** 71 **Radar:** 0 **Belt armor:** 10
Deck armor: 6 **Primary turret armor:** 13 **Secondary turret armor:** 4
Ship selection points: 134 **Earliest year of availability:** 1939

BRITISH DESTROYER ESCORT — WORLD WAR II

DE HUNT
Main guns: 4 x 4"/40 **Secondary mounts:** 3 x MK-IX TT
Maximum speed: 27 **Flotation:** 3 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 6 **Earliest year of availability:** 1940

FRENCH HEAVY CRUISER — WORLD WAR II

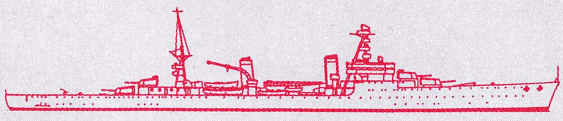


CA DUQUESNE
Main guns: 8 x 8"/5 **Secondary mounts:** 12 x 23 DT TT
Maximum speed: 34 **Flotation:** 24 **Radar:** 0 **Belt armor:** 1
Deck armor: 1 **Primary turret armor:** 1 **Secondary turret armor:** 0
Ship selection points: 36 **Earliest year of availability:** 1939

BRITISH DESTROYER ESCORT — WORLD WAR II

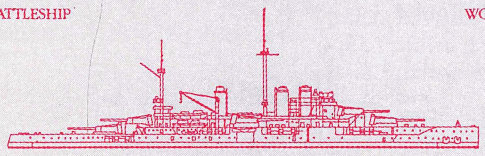
DE LOCH
Main guns: 1 x 4"/40 **Maximum speed:** 20
Flotation: 3 **Radar:** 2 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 4 **Earliest year of availability:** 1944

FRENCH HEAVY CRUISER — WORLD WAR II



CA SUFFREN
Main guns: 8 x 8"/50 **Secondary mounts:** 8 x 3.5"/76 **Tertiary:** 12 x 23 DTTT
Maximum speed: 31 **Flotation:** 26 **Radar:** 0 **Belt armor:** 3
Deck armor: 2 **Primary turret armor:** 1 **Secondary turret armor:** 0
Ship selection points: 44 **Earliest year of availability:** 1939

FRENCH BATTLESHIP — WORLD WAR II

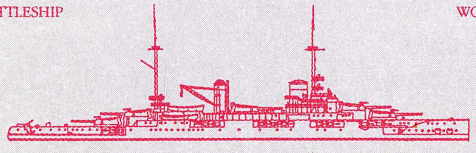


BB COURBET
Main guns: 12 x 12"/45 **Secondary mounts:** 22 x 5.5"/50
Maximum speed: 20 **Flotation:** 52 **Radar:** 0 **Belt armor:** 11
Deck armor: 4 **Primary turret armor:** 12 **Secondary turret armor:** 7
Ship selection points: 125 **Earliest year of availability:** 1939

FRENCH HEAVY CRUISER — WORLD WAR II

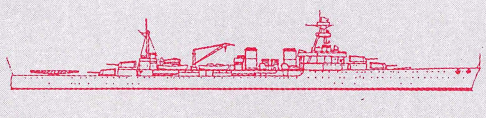
CA ALGERIE
Main guns: 8 x 8"/50 **Secondary mounts:** 12 x 3.9"/60 **Tertiary:** 6 x 23 DTTT
Maximum speed: 31 **Flotation:** 28 **Radar:** 0 **Belt armor:** 5
Deck armor: 3 **Primary turret armor:** 4 **Secondary turret armor:** 0
Ship selection points: 51 **Earliest year of availability:** 1939

FRENCH BATTLESHIP — WORLD WAR II



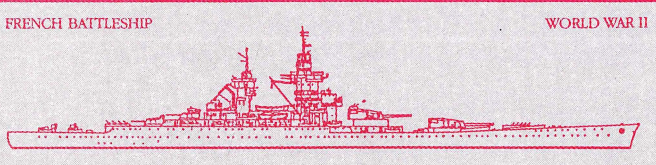
BB BRETAGNE
Main guns: 10 x 13.4"/52 **Secondary mounts:** 14 x 5.5"/50
Maximum speed: 20 **Flotation:** 52 **Radar:** 0 **Belt armor:** 11
Deck armor: 3 **Primary turret armor:** 13 **Secondary turret armor:** 7
Ship selection points: 123 **Earliest year of availability:** 1939

FRENCH LIGHT CRUISER — WORLD WAR II



CL TROUIN
Main guns: 8 x 6.1"/55 **Secondary mounts:** 12 x 23 DT TT
Maximum speed: 33 **Flotation:** 19 **Radar:** 0 **Belt armor:** 1
Deck armor: 1 **Primary turret armor:** 1 **Secondary turret armor:** 0
Ship selection points: 28 **Earliest year of availability:** 1939

FRENCH BATTLESHIP — WORLD WAR II



BB RICHELIEU
Main guns: 8 x 15"/45 **Secondary mounts:** 9 x 6.1"/55 **Tertiary:** 12 x 3.9"/60
Maximum speed: 30 **Flotation:** 95 **Radar:** 0 **Belt armor:** 14
Deck armor: 7 **Primary turret armor:** 18 **Secondary turret armor:** 5
Ship selection points: 184 **Earliest year of availability:** 1940

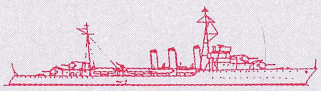
FRENCH LIGHT CRUISER — WORLD WAR II

CL BERTIN
Main guns: 9 x 6"/50 **Secondary mounts:** 4 x 3.5"/76 **Tertiary:** 6 x 23 DTTT
Maximum speed: 37 **Flotation:** 17 **Radar:** 0 **Belt armor:** 1
Deck armor: 3 **Primary turret armor:** 1 **Secondary turret armor:** 0
Ship selection points: 30 **Earliest year of availability:** 1939

FRENCH LIGHT CRUISER — WORLD WAR II

CL GLOIRE
Main guns: 9 x 6"/50 **Secondary mounts:** 8 x 3.5"/76 **Tertiary:** 4 x 23 DT TT
Maximum speed: 36 **Flotation:** 18 **Radar:** 0 **Belt armor:** 4
Deck armor: 2 **Primary turret armor:** 4 **Secondary turret armor:** 0
Ship selection points: 37 **Earliest year of availability:** 1939

FRENCH DESTROYER — WORLD WAR II



DD SIMOUN
Main guns: 4 x 5.1"/40 **Secondary mounts:** 6 x 23 DT TT
Maximum speed: 33 **Flotation:** 4 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 8 **Earliest year of availability:** 1939

FRENCH DESTROYER — WORLD WAR II

DD JAGUAR
Main guns: 5 x 5.1"/40 **Secondary mounts:** 6 x 23 DT TT
Maximum speed: 35 **Flotation:** 6 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 10 **Earliest year of availability:** 1939

FRENCH DESTROYER — WORLD WAR II

DD VOLTA
Main guns: 8 x 5.5"/45 **Secondary mounts:** 10 x 23 DT TT
Maximum speed: 39 **Flotation:** 8 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 17 **Earliest year of availability:** 1939

FRENCH DESTROYER — WORLD WAR II

DD GUEPARD
Main guns: 5 x 5.5"/45 **Secondary mounts:** 6 x 23 DT TT
Maximum speed: 36 **Flotation:** 7 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 11 **Earliest year of availability:** 1939

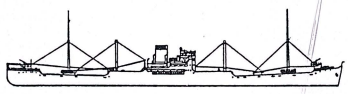
FRENCH DESTROYER — WORLD WAR II

DD LE HARDI
Main guns: 6 x 5.1"/40 **Secondary mounts:** 7 x 23 DT TT
Maximum speed: 38 **Flotation:** 5 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 10 **Earliest year of availability:** 1939

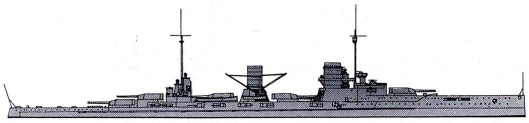
FRENCH DESTROYER — WORLD WAR II

DD LE FANTASQUE
Main guns: 5 x 5.5"/45 **Secondary mounts:** 9 x 23 DT TT
Maximum speed: 42 **Flotation:** 7 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 12 **Earliest year of availability:** 1939

CARGO SHIP (TRANSPORT), ALL NAVIES — WORLD WAR II



AK TRANSPORT
Main guns: 2 x 3.5"/76 **Maximum speed:** 15
Flotation: 10 **Radar:** 0 **Belt armor:** 0
Deck armor: 0 **Primary turret armor:** 0 **Secondary turret armor:** 0
Ship selection points: 20 **Earliest year of availability:** 1939



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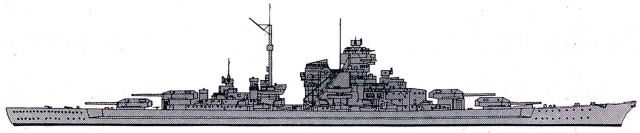


SHIP DATA CHART — WORLD WAR I

GERMAN

TYPE	CLASS	MG	SM	TM	SP	FL	BA	DA	TA	STA	SSP	YEAR
OBB	BRAUNSCHWEIG	4 x 11"/40	14 x 7.5"/50	14 x 3.5"/45	18	29	8	3	10	6	72	14
OBB	DEUTSCHLAND	4 x 11"/40	14 x 7.5"/50	20 x 3.5"/45	18	29	9	3	11	7	76	14
BB	NASSAU	12 x 11"/45	12 x 5.9"/45	12 x 3.5"/45	21	41	11	4	11	6	104	14
BB	HELGOLAND	12 x 12"/50	14 x 5.9"/45	10 x 3.5"/45	21	49	12	4	12	7	120	14
BB	KAISER	10 x 12"/50	14 x 5.9"/45	6 x 3.5"/45	21	54	14	4	12	7	120	14
BB	KONIG	10 x 12"/50	14 x 5.9"/45	6 x 3.5"/45	21	57	14	5	14	7	126	14
BB	BAYERN	8 x 15"/45	16 x 5.9"/45	8 x 3.5"/45	21	65	14	5	14	7	152	16
BC	VON DER TANN	8 x 11"/45	10 x 5.9"/45	12 x 3.5"/45	27	43	10	3	9	6	91	14
BC	MOLTKE	10 x 11"/50	12 x 5.9"/45	8 x 3.5"/45	27	51	11	3	10	6	105	14
BC	SEYDLITZ	10 x 11"/50	12 x 5.9"/45	10 x 3.5"/45	29	57	12	4	10	6	113	14
BC	DERFFLINGER	8 x 12"/50	12 x 5.9"/45	8 x 3.5"/45	27	62	12	4	11	6	117	14
BC	LUETZOW	8 x 12"/50	14 x 5.9"/45	8 x 3.5"/45	27	63	12	4	11	6	118	15
BC	MACKENSEN	8 x 14"/50	14 x 5.9"/45	8 x 3.5"/45	27	71	13	4	12	6	143	18
BC	ERSATZ YORCK	8 x 15"/45	12 x 5.9"/45	8 x 3.5"/45	27	76	13	5	13	6	157	18
AC	PRINZ ADALBERT	4 x 8.2"/40	10 x 5.9"/45	12 x 3.5"/45	20	20	4	3	6	4	49	14
AC	ROON	4 x 8.2"/40	10 x 5.9"/45	14 x 3.5"/45	21	21	4	3	6	4	50	14
AC	SCHARNHORST	8 x 8.2"/40	6 x 5.9"/45	18 x 3.5"/45	24	26	6	3	7	6	60	14
AC	BLUCHER	12 x 8.2"/45	8 x 5.9"/45	16 x 3.5"/45	24	35	8	3	8	6	77	14
CL	NYMPHE	10 x 4.1"/45	2 x 18" TT	—	21	6	1	2	0	0	12	14
CL	BREMEN	10 x 4.1"/45	2 x 18" TT	—	23	8	1	2	0	0	13	14
CL	STETTIN	10 x 4.1"/45	2 x 18" TT	—	25	8	1	2	0	0	13	14
CL	MAGDEBURG	7 x 5.9"/45	2 x 3.5"/45	2 x 19.7" TT	27	11	2	2	2	0	23	14
CL	PILLAU	8 x 5.5"/50	4 x 19.7" TT	—	27	10	1	3	2	0	22	15
CL	BRUMMER	4 x 5.9"/45	2 x 3.5"/45	2 x 19.7" TT	28	12	2	1	2	0	19	16
CL	KONIGSBURG	8 x 5.9"/45	4 x 19.7" TT	—	27	14	3	2	2	0	27	16
TB	T-138	1 x 3.5"/45	3 x 18" TT	—	30	2	0	0	0	0	3	14
TB	T-162	2 x 3.5"/45	3 x 18" TT	—	32	2	0	0	0	0	3	14
TB	T-176	2 x 3.5"/45	4 x 19.7" TT	—	33	2	0	0	0	0	4	14
DD	V-1	2 x 3.5"/45	4 x 19.7" TT	—	33	2	0	0	0	0	4	14
DD	S-13	2 x 4.1"/45	1 x 3.5"/45	4 x 19.7" TT	34	3	0	0	0	0	5	14
DD	V-25	3 x 3.5"/45	6 x 19.7" TT	—	34	3	0	0	0	0	6	14
DD	S-53	3 x 4.1"/45	6 x 19.7" TT	—	35	4	0	0	0	0	7	15
DD	G-101	4 x 4.1"/45	6 x 19.7" TT	—	34	5	0	0	0	0	8	15
DD	S-113	4 x 5.9"/45	4 x 23.7" TT	—	35	6	0	0	0	0	12	18
DD	V-125	3 x 4.1"/45	6 x 19.7" TT	—	35	5	0	0	0	0	8	17

BRITISH

TYPE	CLASS	MG	SM	TM	SP	FL	BA	DA	TA	STA	VP	YEAR
OBB	MAJESTIC	4 x 12"/40	12 x 6"/45	—	17	32	6	3	7	4	61	14
OBB	FORMIDABLE	4 x 12"/40	12 x 6"/45	—	18	31	9	3	10	6	69	14
OBB	SWIFTSURE	4 x 10"/45	14 x 7.5"/50	—	19	28	7	3	10	7	65	14
OBB	KING EDWARD VII	4 x 12"/40	4 x 9.2"/45	10 x 6"/50	18	31	9	3	12	7	75	14
OBB	LORD NELSON	4 x 12"/45	10 x 9.2"/45	—	18	35	12	4	12	7	83	14
BB	DREADNOUGHT	10 x 12"/45	—	—	21	43	11	3	11	0	96	14
BB	BELLEROPHON	10 x 12"/45	16 x 4.7"/45	—	21	44	10	4	11	0	101	14
BB	ST. VINCENT	10 x 12"/50	20 x 4"/50	—	21	46	10	3	11	0	100	14
BB	NEPTUNE	10 x 12"/50	16 x 4"/50	—	21	45	10	3	11	0	99	14
BB	ORION	10 x 13.5"/45	16 x 4"/50	—	21	52	12	4	11	0	124	14
BB	KING GEORGE V	10 x 13.5"/45	16 x 4"/50	—	21	51	12	4	11	0	123	14
BB	IRON DUKE	10 x 13.5"/45	12 x 6"/45	—	21	61	12	3	11	6	132	14
BB	QUEEN ELIZABETH	8 x 15"/42	16 x 6"/45	—	24	66	13	3	13	6	146	15
BB	REVENGE	8 x 15"/42	14 x 6"/45	—	21	62	13	4	13	6	143	16
BC	INVINCIBLE	8 x 12"/45	16 x 4"/50	—	25	40	6	2	7	0	77	14
BC	INDEFATIGABLE	8 x 12"/50	16 x 4"/50	—	25	44	6	2	7	0	80	14
BC	LION	8 x 13.5"/45	16 x 4"/50	—	27	59	9	2	9	4	111	14
BC	TIGER	8 x 13.5"/45	12 x 6"/45	—	29	70	9	3	9	6	125	14

MG = Main guns **SM** = Secondary mounts **TM** = Tertiary mounts **SP** = Maximum speed **FL** = Flotation **BA** = Belt armor **DA** = Deck armor
TA = Primary turret armor **STA** = Secondary turret armor **SSP** = Ship selection points **YEAR** = Earliest year of availability **TT** = Torpedo tubes

SHIP DATA CHART — WORLD WAR I

BRITISH

TYPE	CLASS	MG	SM	TM	SP	FL	BA	DA	TA	STA	SSP	YEAR
BC	RENOWN	6 x 15″/42	15 x 4″/50	—	32	65	6	3	11	0	117	16
BC	COURAGEOUS	4 x 15″/42	18 x 4″/50	—	32	45	3	2	13	0	88	16
BC	HOOD	8 x 15″/42	12 x 5.5″/50	4 x 4″/50	31	82	12	3	15	0	161	18
AC	CRESSY	2 x 9.2″/40	12 x 6″/45	—	21	28	6	3	6	5	51	14
AC	DRAKE	2 x 9.2″/40	16 x 6″/45	—	23	31	6	3	5	6	56	14
AC	MONMOUTH	14 x 6″/45	—	—	23	22	4	2	5	5	42	14
AC	DEVONSHIRE	14 x 7.5″/50	6 x 6″/45	—	22	24	6	2	6	6	44	14
AC	BLACK PRINCE	6 x 9.2″/45	10 x 6″/50	—	22	30	6	2	8	6	58	14
AC	WARRIOR	6 x 9.2″/45	4 x 7.5″/50	—	22	30	6	2	8	8	54	14
AC	MINOTAUR	4 x 9.2″/50	10 x 7.5″/50	—	23	34	6	2	8	8	63	14
CL	HIGHFLYER	11 x 6″/45	2 x 18″ TT	—	20	13	1	3	0	0	25	14
CL	PATHFINDER	9 x 4″/50	2 x 14″ TT	—	25	7	2	1	1	1	13	14
CL	ACTIVE	10 x 4″/50	2 x 21″ TT	—	26	8	0	0	0	0	10	14
CL	BRISTOL	2 x 6″/50	10 x 4″/50	2 x 18″ TT	27	11	0	2	0	0	17	14
CL	WEYMOUTH	8 x 6″/50	2 x 21″ TT	—	27	12	0	2	0	0	21	14
CL	NOTTINGHAM	9 x 6″/50	2 x 21″ TT	—	27	11	3	0	0	0	21	14
CL	ARETHUSA	3 x 6″/50	4 x 4″/50	8 x 21″ TT	30	8	3	1	0	0	17	14
CL	CAROLINE	4 x 6″/50	8 x 21″ TT	—	29	8	3	1	0	0	16	14
CL	CALEDON	5 x 6″/50	8 x 21″ TT	—	30	9	3	1	0	0	18	17
DD	ACORN	2 x 4″/50	2 x 21″ TT	—	28	2	0	0	0	0	3	14
DD	ACASTA	3 x 4″/50	2 x 21″ TT	—	29	3	0	0	0	0	4	14
DD	LYSANDER	3 x 4″/50	4 x 21″ TT	—	30	3	0	0	0	0	5	14
DD	BOTHA	4 x 4″/50	4 x 21″ TT	—	32	4	0	0	0	0	7	14
DD	SABRE	3 x 4″/50	4 x 21″ TT	—	36	3	0	0	0	0	5	18
DD	VAMPIRE	4 x 4″/50	4 x 21″ TT	—	34	3	0	0	0	0	6	17

ALL

TYPE	CLASS	MG	SM	TM	SP	FL	BA	DA	TA	STA	SSP	YEAR
AK	TRANSPORT	2 x 3.5″/45	—	—	15	10	0	0	0	0	20	14

SHIP DATA CHART — WORLD WAR II

GERMAN

TYPE	CLASS	MG	SM	TM	SP	FL	RDR	BA	DA	TA	STA	SSP	YEAR
BB	BISMARCK	8 x 15"/47	12 x 5.9"/55	16 x 4.1"/65	30	104	1	16	10	18	5	207	41
BC	SCHARNHORST	9 x 11"/55	12 x 5.9"/55	14 x 4.1"/65	31	78	0	15	8	15	5	156	39
CA	GRAF SPEE	6 x 11"/55	8 x 5.9"/55	6 x 4.1"/65	27	33	0	5	4	6	1	72	39
CA	HIPPER	8 x 8"/60	12 x 4.1"/65	12 x G7A TT	32	37	0	5	4	6	0	64	39
CL	KONIGSBERG	9 x 5.9"/55	6 x 3.5"/76	12 x G7A TT	32	17	0	3	2	3	0	35	39
CL	NURNBURG	9 x 5.9"/55	8 x 3.5"/76	12 x G7A TT	32	18	0	4	1	2	0	36	39
DD	MAASS	5 x 5"/45	8 x G7A TT	—	37	7	0	0	0	0	0	12	39
DD	Z-23	5 x 5.9"/55	8 x G7A TT	—	37	7	0	0	0	0	0	14	40
DE	WOLF	3 x 4.1"/65	6 x G7A TT	—	32	3	0	0	0	0	0	6	39
DE	T-22	4 x 4.1"/65	6 x G7A TT	—	32	4	0	0	0	0	0	8	41

ITALIAN

TYPE	CLASS	MG	SM	TM	SP	FL	RDR	BA	DA	TA	STA	SSP	YEAR
BB	CAVOUR	10 x 12.6"/44	12 x 4.7"/50	8 x 3.9"/60	27	58	0	10	6	11	5	122	40
BB	DORIA	10 x 12.6"/44	12 x 5.3"/45	10 x 3.5"/76	27	59	0	10	6	11	5	123	40
BB	LITTORIO	9 x 15"/45	12 x 6"/50	12 x 3.5"/76	30	92	0	14	8	14	6	184	40
CA	TRENTO	8 x 8"/50	12 x 3.9"/60	8 x SI-270 TT	35	27	0	3	2	4	0	48	40
CA	ZARA	8 x 8"/50	12 x 3.9"/60	—	35	29	0	6	3	6	0	53	40
CA	BOLZANO	8 x 8"/50	16 x 3.9"/60	8 x SI-270 TT	37	28	0	3	2	4	0	50	40
CL	BARBIANO	8 x 6"/50	6 x 3.9"/60	4 x SI-270 TT	42	14	0	1	1	1	0	25	40
CL	CADORNA	8 x 6"/50	6 x 3.9"/60	4 x SI-270 TT	37	16	0	1	1	1	0	26	40
CL	MONTECUCCOLI	8 x 6"/50	6 x 3.9"/60	4 x SI-270 TT	37	19	0	4	1	3	0	34	40
CL	D'AOSTA	8 x 6"/50	6 x 3.9"/60	6 x SI-270 TT	37	22	0	3	2	4	0	37	40
CL	GARIBALDI	10 x 6"/50	8 x 3.9"/60	6 x SI-270 TT	35	24	0	5	2	5	0	45	40
CL	REGOLO	8 x 5.3"/45	8 x SI-270 TT	—	42	11	0	0	0	0	0	15	42
DD	TURBINE	4 x 4.7"/50	6 x SI-270 TT	—	35	4	0	0	0	0	0	8	40
DD	ZENO	6 x 4.7"/50	6 x SI-270 TT	—	37	6	0	0	0	0	0	11	40
DD	MAESTRALE	4 x 4.7"/50	6 x SI-270 TT	—	37	5	0	0	0	0	0	9	40
DE	SPICA	3 x 3.9"/60	4 x W-200 TT	—	32	3	0	0	0	0	0	5	40

BRITISH

TYPE	CLASS	MG	SM	TM	SP	FL	RDR	BA	DA	TA	STA	SSP	YEAR
BB	REVENGE	8 x 15"/42	12 x 6"/45	8 x 4"/40	21	67	0	13	4	11	6	144	39
BB	BARHAM	8 x 15"/42	12 x 6"/45	8 x 4"/40	25	70	0	13	3	13	6	149	39
BB	WARSPITE	8 x 15"/42	8 x 6"/45	8 x 4"/40	24	71	0	13	4	11	6	146	39
BB	Q. ELIZABETH	8 x 15"/42	20 x 4.5"/50	—	25	72	0	13	4	13	1	149	40
BB	NELSON	9 x 16"/45	12 x 6"/50	6 x 4.7"/50	23	76	0	14	6	15	2	186	39
BB	KING GEORGE V	10 x 14"/50	16 x 5.25"/50	—	28	89	0	15	6	13	2	170	41
BC	REPULSE	6 x 15"/42	15 x 4"/40	8 x IX TT	29	75	0	9	4	11	1	132	39
BC	RENOWN	6 x 15"/42	20 x 4.5"/50	8 x IX TT	30	75	0	9	5	11	2	135	39
BC	HOOD	8 x 15"/42	12 x 5.5"/50	8 x 4"/40	30	90	0	12	3	15	0	165	39
CA	KENT	8 x 8"/50	8 x 4"/40	8 x MK-IX TT	32	29	0	4	2	2	0	47	39
CA	DORSETSHIRE	8 x 8"/50	8 x 4"/40	8 x MK-IX TT	32	27	0	1	4	2	0	44	39
CA	EXETER	6 x 8"/50	4 x 4"/40	6 x MK-IX TT	32	21	0	3	2	2	0	35	39
CL	CALEDON	5 x 6"/50	8 x MK-IX TT	—	30	11	0	3	1	1	0	20	39
CLAA	CAPETOWN	8 x 4"/40	—	—	30	11	0	3	1	0	0	16	39
CL	DANAE	6 x 6"/50	12 x MK-IX TT	—	30	12	0	3	1	1	0	23	39
CL	ENTERPRISE	7 x 6"/50	4 x 4"/40	16 x MK-IX TT	32	19	0	3	1	1	0	32	39
CL	AJAX	8 x 6"/50	8 x 4"/40	8 x MK-IX TT	32	19	0	4	2	1	0	34	39
CL	ARETHUSA	6 x 6"/50	8 x 4"/40	6 x MK-IX TT	32	14	0	3	2	1	0	27	39
CL	SOUTHAMPTON	12 x 6"/50	8 x 4"/40	6 x MK-IX TT	32	25	0	4	3	2	0	44	39
CL	EDINBURGH	12 x 6"/50	12 x 4"/40	6 x MK-IX TT	32	30	0	4	3	2	0	50	39
CLAA	DIDO	10 x 5.25"/50	6 x MK-IX TT	—	33	14	0	3	2	2	0	24	40
CL	FIJI	12 x 6"/50	8 x 4"/40	6 x MK-IX TT	32	23	1	3	2	2	0	42	40
CLAA	ROYALIST	8 x 5.25"/50	—	—	33	15	1	3	2	2	0	23	43
DD	VAMPIRE	4 x 4.7"/50	6 x MK-IX TT	—	34	4	0	0	0	0	0	7	39

MG= Main guns **SM**= Secondary mounts **TM**= Tertiary mounts **SP**= Maximum speed **FL**= Flotation **RDR**= Radar **BA**= Belt armor **DA**= Deck armor **TA** = Primary turret armor **STA** = Secondary turret armor **SSP** = Ship selection points **YEAR** = Earliest year of availability **TT** = Torpedo tubes

SHIP DATA CHART — WORLD WAR II

BRITISH

TYPE	CLASS	MG	SM	TM	SP	FL	RDR	BA	DA	TA	STA	SSP	YEAR
DD	ACASTA	4 x 4.7"/50	8 x MK-IX TT	—	35	4	0	0	0	0	0	8	39
DD	ELECTRA	4 x 4.7"/50	8 x MK-IX TT	—	36	4	0	0	0	0	0	8	39
DD	IMPERIAL	4 x 4.7"/50	10 x MK-IX TT	—	36	4	0	0	0	0	0	9	39
DD	TRIBAL	8 x 4.7"/50	4 x MK-IX TT	—	35	6	0	0	0	0	0	11	39
DD	JERVIS	6 x 4.7"/50	10 x MK-IX TT	—	35	5	0	0	0	0	0	11	39
DD	LIGHTNING	6 x 4.7"/50	10 x MK-IX TT	—	35	5	0	0	0	0	0	11	40
DD	ONSLOW	4 x 4.7"/50	8 x MK-IX TT	—	35	4	0	0	0	0	0	8	41
DD	SAVAGE	4 x 4.7"/50	8 x MK-IX TT	—	35	5	1	0	0	0	0	9	43
DD	ZEBRA	4 x 4.5"/50	8 x MK-IX TT	—	36	5	2	0	0	0	0	9	44
DD	BATTLE	4 x 4.5"/50	8 x MK-IX TT	—	35	6	2	0	0	0	0	10	44
DE	HUNT	4 x 4"/40	3 x MK-IX TT	—	27	3	0	0	0	0	0	6	40
DE	LOCH	1 x 4"/40	—	—	20	3	2	0	0	0	0	4	44

FRENCH

TYPE	CLASS	MG	SM	TM	SP	FL	RDR	BA	DA	TA	STA	SSP	YEAR
BB	COURBET	12 x 12"/45	22 x 5.5"/50	—	20	52	0	11	4	12	7	125	39
BB	BRETAGNE	10 x 13.4"/52	14 x 5.5"/50	—	20	52	0	11	3	13	7	123	39
BB	RICHELIEU	8 x 15"/45	9 x 6.1"/55	12 x 3.9"/60	30	95	0	14	7	18	5	184	40
BC	DUNKERQUE	8 x 13"/52	16 x 5.1"/40	—	30	71	0	10	6	13	4	134	39
CA	DUQUESNE	8 x 8"/50	12 x 23 DT TT	—	34	24	0	1	1	1	0	36	39
CA	SUFFREN	8 x 8"/50	8 x 3.5"/76	12 x 23 DT TT	31	26	0	3	2	1	0	44	39
CA	ALGERIE	8 x 8"/50	12 x 3.9"/60	6 x 23 DT TT	31	28	0	5	3	4	0	51	39
CL	TROUIN	8 x 6.1"/55	12 x 23 DT TT	—	33	19	0	1	1	1	0	28	39
CL	BERTIN	9 x 6"/50	4 x 3.5"/76	6 x 23 DT TT	37	17	0	1	3	1	0	30	39
CL	GLOIRE	9 x 6"/50	8 x 3.5"/76	4 x 23 DT TT	36	18	0	4	2	4	0	37	39
DD	JAGUAR	5 x 5.1"/40	6 x 23 DT TT	—	35	6	0	0	0	0	0	10	39
DD	GUEPARD	5 x 5.5"/45	6 x 23 DT TT	—	36	7	0	0	0	0	0	11	39
DD	LE FANTASQUE	5 x 5.5"/45	9 x 23 DT TT	—	42	7	0	0	0	0	0	12	39
DD	SIMOUN	4 x 5.1"/40	6 x 23 DT TT	—	33	4	0	0	0	0	0	8	39
DD	VOLTA	8 x 5.5"/45	10 x 23 DT TT	—	39	8	0	0	0	0	0	17	39
DD	LE HARDI	6 x 5.1"/40	7 x 23 DT TT	—	38	5	0	0	0	0	0	10	39

ALL

TYPE	CLASS	MG	SM	TM	SP	FL	RDR	BA	DA	TA	STA	SSP	YEAR
AK	TRANSPORT	2 x 3.5"/76	—	—	15	10	0	0	0	0	0	20	39

GUN DATA CHARTS

WORLD WAR I

ID	DESCRIPTION	SIZE	RANGE	PEN
6	15/45	21	26	24
7	15/42	25	25	23
8	14/50	18	26	23
9	13.5/45	18	21	20
10	13.5/45	16	23	18
11	12/50	13	23	17
12	12/50	11	24	16
13	12/45	11	17	14
14	12/40	11	15	12
15	11/50	10	21	14
16	11/45	9	23	13
17	11/40	8	19	12
18	10/45	7	16	11
19	9.2/50	6	18	10
20	9.2/45	6	16	9
21	9.2/40	6	14	8
22	8.2/45	6	21	9
23	8.2/40	6	14	8
24	7.5/50	5	20	8
25	6/50	4	22	7
26	6/50	4	12	6
27	6/45	4	15	5
28	5.9/45	4	19	7
29	5.9/45	4	13	6
30	5.5/50	4	11	5
31	4.7/45	3	16	4
32	4.1/45	2	14	4
33	4/50	1	11	4
34	3.5/45	1	11	4

WORLD WAR II

ID	DESCRIPTION	SIZE	RANGE	PEN
6	16/45	27	40	25
7	15/47	27	39	26
8	15/45	22	43	24
9	15/42	22	32	23
10	15/42	22	25	23
11	14/50	18	36	23
12	13.4/52	17	29	21
13	13/52	16	38	21
14	12.6/44	15	32	18
15	12/45	14	28	17
16	11/55	12	39	18
17	8/60	6	37	10
18	8/50	6	30	8
19	6.1/55	4	28	7
20	6/50	4	25	7
21	6/45	4	15	7
22	5.9/55	4	26	7
23	5.5/50	4	18	6
24	5.5/45	4	24	6
25	5.3/45	4	22	5
26	5.25/50	4	22	5
27	5.1/40	3	19	4
28	5/45	3	18	4
29	4.7/50	3	17	4
30	4.5/50	3	17	4
31	4.1/65	2	18	4
32	4/40	2	16	3
33	3.9/60	2	18	4
34	3.5/76	1	13	3

The gun description consists of two numbers: gun barrel size in inches / gun caliber. Numbers listed in the SIZE column represent the weight of the shell. Numbers listed in the RANGE column reflect the range of the gun in 1000s of yards. Numbers listed in the PEN column reflect the armor penetration effectiveness of the gun.

GUNFIRE ACCURACY MODIFIERS

FC	EFFECT	DESCRIPTION
all	add	target speed / 2
all	add	target turn* / 2
all	add	firer speed / 2
all	add	firer turn* / 2
V	add	10, if other ships firing at target
V	add	30, if ranging in
V	add	30, if range > visibility / 2
R	add	30, for radar fire control

AFTER ALL ADDITIONS HAVE BEEN MADE, THE FOLLOWING MULTIPLIERS MAY BE APPLIED:

all	×	½, if crossing the target ship's 'T'
all	×	(10 − RADAR or GUN DIRECTOR) / 10, × 2 if fire control/gun director is KO'd
all	×	RANGE / GUN MAX RANGE
V	×	½, if ranged in

AFTER ALL MULTIPLIERS HAVE BEEN APPLIED:

all	add	5
all	add	5, if CA, CL, CLAA, AC, AK target
all	add	25, if DD, DE, TB target

V = visual fire control only
R = radar fire control only

Note that round off errors of ±1 may occur.

The probability of a gunshot hitting will never be worse than 1/230.

* The difference between the ship's current course and its assigned course. Ships following other ships consider their assigned courses to be that which aims them directly at the ship they are following.

TORPEDO DATA CHARTS

WORLD WAR I

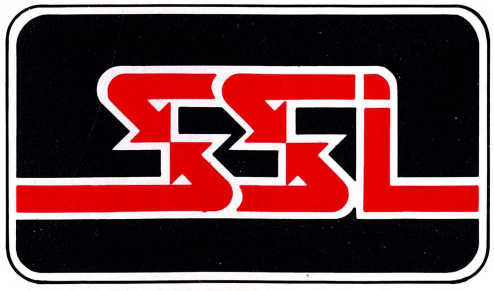
ID	DESCRIPTION	SIZE	SPEED	RANGE
1	23.7"	15	25/45	16/9
2	21"	10	25/45	11/6
3	19.7"	9	25/40	11/6
4	18"	7	25/35	7/5
5	14"	5	25/35	6/4

WORLD WAR II

ID	DESCRIPTION	SIZE	SPEED	RANGE
1	G7A	8	30/44	15/7
2	SI-270	7	29/40	13/7
3	MK-IX	9	35/41	15/11
4	23DT	8	35/39	14/10
5	W-200	5	30/44	9/4

The numbers listed in the size column represent the size of the torpedo warhead. There are two numbers listed for both the speed and range of the torpedo. The first number is the speed or range of the torpedo at the 'slow setting,' and the second number is the speed or range of the torpedo at the 'fast setting.'

Our main business telephone number is (415) 964-1353. We also have a Technical Support Hotline number: (415) 964-1200, which you can call if you have problems with your disk or need a clarification of the game/rules. Both numbers can be called every weekday, 9 to 5 (Pacific Time).



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